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OF
CHILDREN'S DISEASES

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THE BRITISH JOURNAL
OF
CHILDREN'S DISEASES

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OF

CHILDREN'S DISEASES.

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Original Articles.

THREE CASES OF TETANUS CURED BY SUBCUTANEOUS INJECTIONS OF ANTI-TETANIC SERUM.*

By J. Comby,

President de la Société Médicale des Hôpitaux, Médecin des Enfants Malades, Paris.

It is well known that subcutaneous injections of anti-tetanic serum have a preventive action as regards tetanus. In the case of a wound soiled by the earth of the streets, high roads, or fields, an injection of 10 to 20 c.c. of this serum as soon as possible is indicated. This practice has been adopted by the majority of surgeons. On this point we are almost all agreed. The same cannot be said of the curative action of the serum, which is admitted by some and disputed by others. Some experimenters wishing to enforce the action of the serum by bringing it close to the seat of the disease have proposed injecting it into the cerebral substance. Chauffard and Quénu, at the suggestion of Roux and Borrel, of the Institut Pasteur, L. Ombrédanne ('Presse Médicale,' 1898), W. J. Gibb ('Brit. Med. Journ.,' August the 15th, 1899), Letoux ('Anjou Médical,' September, 1899) have cured tetanus in young persons by injecting into the brain, after trephining, 2 to 3 c.c. of anti-tetanic serum; Letoux has injected as much as 10 c.c. into each hemisphere. L. Delmas ('Presse Médicale,' September the 17th, 1898) has not been successful with this method.

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* A paper read before the Société Médicale des Hôpitaux de Paris on October the 9th, 1914.

In the case of a girl whom L. Ombrédanne kindly trephined and injected for me, I was unfortunately unable to prevent a fatal issue ('Arch. de Méd. des Enf.,' August, 1899). The success of intracerebral injection, therefore, which requires the assistance of a good surgeon, is by no means invariable.

The same is to be said of intra-spinal injection, which is a much simpler procedure, thanks to lumbar puncture. Both successes and failures have resulted from the use of this method.

F. Peruzzi ('La Pediatria,' July, 1908) cured a case of tetanus in a boy, aged 7 years, by eight intra-spinal injections of serum, each containing 10 c.c. (80 c.c. in all); the serum came from Berne. In five other cases treated in the same way the result was *nil*.

After this failure, having two other cases of tetanus to treat, he injected at once into the spinal canal 30 c.c. of serum, and recovery took place. He therefore advocates massive intra-spinal injections of anti-tetanic serum.

Subcutaneous injections of anti-tetanic serum have often been employed and in large doses. J. Galletly ('Brit. Med. Journ.,' February the 18th, 1899) cured a boy, aged 8 years, by repeated injections of serum (240 c.c. in a fortnight); Murray ('Ind. Med. Record,' March the 28th, 1914) cured a boy, who had contracted tetanus from a wound in the foot, by nine injections of anti-tetanic serum (one daily, in all 90 c.c.). In Letoux's case, that of a boy, aged 14 years, who had been given two intra-cerebral injections of 10 c.c., one must also take into account the numerous subcutaneous injections which were given (ten from May the 7th to May the 22nd, or 105 grm. of the anti-tetanic serum of the Institut Pasteur). V. Barachini ('Gazz. d. Osp.,' January the 7th, 1900) cured a boy, aged 13 years, by two subcutaneous injections in the thigh of Tizzoni's anti-tetanic serum (50 c.c. in all). This serum was employed at Pisa in the same manner in five other cases with successful results. S. H. Long ('Brit. Med. Journ.,' November the 24th, 1900) cured a boy, aged 13 years, with thirteen subcutaneous and fifty-five rectal injections of anti-tetanic serum (680 c.c. in all). In a case of tetanus neonatorum in a female infant, aged 13 days, treated by J. MacCaw ('Brit. Med. Journ.,' March the 30th, 1901) cure was obtained by two subcutaneous injections of anti-tetanic serum from the Institut Pasteur (3 c.c. and 2 c.c. respectively).

The same result was obtained by L. Morquio ('Rev. Med. del Uruguay,' November, 1903) in a newborn infant, aged 12 days, after three subcutaneous injections of anti-tetanic serum (5 c.c. each, a total of 15 c.c.). W. Winslow Hall (' Brit. Med. Journ.,' March the 9th, 1907) cured a child, aged 8 years, by three subcutaneous injections of anti-tetanic serum (60, 30, and 30 c.c. or 120 c.c. in all). In the case of a boy, aged 8 years, who had contracted tetanus from a wound in the buttock by a fall on a rake, L. Martin and H. Darré ('Soc. Méd. des Hôp.,' June the 25th, 1909) gave successively a subcutaneous injection of 20 c.c. of anti-tetanic serum, an intra-venous injection of 80 c.c., a subcutaneous one of 40 c.c., and lastly two more on the same day of 40 c.c. (220 c.c. in all).

In an infant, aged 9 days, suffering from tetanus, E. Leuret and G. Buard ('Gaz. hebd. des Sci. Méd. de Bordeaux') gave three subcutaneous injections of 5 c.c. of anti-tetanic serum. Death, however, took place.

G. Menabuoni ('Rev. di Clin. Ped.,' March the 10th, 1911) from 1901 to 1911, at the Pædiatric Clinic at Florence, treated seven cases of tetanus in children by different methods: (1) Male infant, aged 25 days; tetanus from umbilical infection; 10 c.c. of cerebro-spinal fluid were withdrawn by lumbar puncture, and 8 c.c. of Milan anti-tetanic serum were injected on January the 15th; on the 16th another lumbar puncture was made and 9 c.c. were injected; on the 19th and 21st 8 c.c. were injected (four intra-spinal injections of 33 c.c. in all); recovery. (2) Boy, aged 4 years; tetanus following wasp bite on left arm; in the course of four days a million units of Tizzoni's serum were given subcutaneously; recovery. (3) Girl, aged 3 years; wound of tongue; two subcutaneous injections of Tizzoni's serum (one million units); recovery. (4) Girl, aged 4 years; intra-spinal injection of 8 c.c. of Kolle's serum; subcutaneous injection two days later; third injection on seventh day; recovery. (5) Girl, aged 7½ years; death in spite of subcutaneous injection of 10 c.c. of Kolle's serum. (6) Boy, aged 7 years; treatment by injection of carbolic acid (Baccelli's method); death. (7) Boy, aged 10 years; intra-spinal injection of 10 c.c. of Berne anti-tetanic serum; fresh injection three days later; then injection of 3 per cent. carbolic acid and serum; recovery.

H. Beates and B. A. Thomas ('Monthly Cyclopædia and Med. Bulletin,' June, 1911) treated a boy, aged 14 years, suffering from tetanus following a badly dressed vaccination wound. Three weeks after vaccination, which was performed on the left thigh, signs of contracture developed. On the fourth day a subcutaneous injection of 3000 units of anti-tetanic serum was given, and at the same time 2 c.c. of 25 per cent. magnesium sulphate solution were injected intra-spinally, followed seven hours later by a subcutaneous injection of 12,000 units of serum and an intra-spinal injection of magnesium sulphate. Fifth day: 15,000 units of serum and 2 c.c. of magnesium sulphate solution; 11 p.m.: 15,000 units of serum and 3 c.c. of magnesium sulphate solution. Sixth day: A more powerful serum (15 c.c., representing 17,700 units) was injected in the morning; in the evening 25 c.c. (29,500 units) were injected, and 5 c.c. of the magnesium sulphate solution were given intra-spinally. Seventh day: Intra-spinal injection of 5 c.c. of concentrated serum (5900 units) and a subcutaneous one of 29,500 units; 11 p.m.: Intra-spinal injection of 5 c.c. of magnesium sulphate solution and subcutaneous injection of 35,000 units. Eighth day: 5900 units intra-spinally and 29,500 units subcutaneously; in the evening 3500 more units intra-spinally and 7080 units subcutaneously. Tenth day: Another subcutaneous injection of 7080 units; recovery.

More recently J. Renault ('Soc. Méd. des Hôp.,' November the 8th, 1912) successfully treated a case of tetanus in a boy, aged 11 years, by massive subcutaneous injection of anti-tetanic serum (260 c.c. in five days).

This review of the literature, though very incomplete, shows that numerous successes are to be attributed to anti-tetanic sero-therapy, whether subcutaneous, intra-cerebral, intra-spinal or intra-venous.

The cases I am showing to-day support this method of serum treatment, which we should not recommend if care had been taken to make use of preventive sero-therapy in the majority of contaminated wounds.

CASE 1.—*Boy, aged* 11 *years; wound of great toe. Tetanus nineteen days later; subcutaneous injections of anti-tetanic serum,* 200 *c.c. in eight days; recovery.*

A boy, aged 11 years, was admitted to my service at the Hôpital des Enfants Malades on August the 19th, 1914.

Family history.—Father, aged 42 years, healthy. Mother, aged 35 years, also healthy; three other children in good health.

Previous history.—Patient was born at full term, breast fed, soon learnt to walk, and had a normal dentition. Measles and whooping-cough during the first two years of life.

Present illness.—On July the 29th the child caught his foot in a railway turn-table and developed a contusion of the right great toe; sutures were only put in on August the 1st, three days after the accident. On August the 16th, nineteen days after the injury, which had not appeared serious, the child complained of pain in the neck and had difficulty in opening his mouth. He was sent to hospital three days later. We found the child pale, looking ill, and making grimaces. He had trismus and could not open his mouth nor articulate. He had also nuchal rigidity and tetanic convulsions of the trunk, which recurred spontaneously or on the slightest stimulus. The pulse kept at about 120, and the rectal temperature was not more than 38° C., and the following days fell to 37·7°, 37·8°, 37·5°, reaching 37° C. on August the 31st.

On the evening of admission to hospital (August the 19th) my house physician, Mlle. Condat, gave the child a subcutaneous injection of 40 c.c. of anti-tetanic serum from the Institut Pasteur. August the 20th: Fresh injection of 20 c.c., and on the following days until the 26th daily injections of 20 c.c. In all the child was given 200 c.c. in eight injections. He also received an enema of chloral and bromide morning and evening. He could swallow fluids only (milk and water).

The injections of serum were well borne, but on September the 4th (eight days after the last injection) the temperature rose again for three days (38·2–38·4° C.) and the child complained of pain in the joints (serum arthralgia), and at the same time an urticarial eruption appeared. The serum sickness lasted three days.

The tetanic spasms, which at first recurred eight or ten times a day, became gradually less frequent and less severe. The child soon became able to open his mouth and articulate a few words. When the serum phenomena developed, the battle was won and the disease jugulated.

The child was discharged convalescent on October the 1st.

This case shows as well as those which I have quoted: (1) The harmlessness of large and repeated doses of anti-tetanic serum; (2) the success of large doses of anti-tetanic serum in young persons. However, we will not conceal our preference for preventive sero-therapy, especially at the present time, and we should like all those injured in the streets, as all the wounded on the field of battle, to receive if possible a preventive dose of 10–20 c.c. of anti-tetanic serum. One could thus avoid the large expenditure of serum required for curative sero-therapy to have any success. A few years ago I cured a case of tetanus with much smaller doses of serum.

CASE 2.—*Boy, aged* 13 *years; tetanus following wound in thigh by a fragment of wood; recovery after five subcutaneous injections of anti-tetanic serum* (50 *c.c.*).

Boy, aged 13 years, admitted to my service at the Hôpital des Enfants Malades on January the 4th, 1911, for tetanus.

Family history.—Father died at fifty-four from laryngitis; mother, aged 55 years, is healthy. A brother died of tuberculosis, another brother and one sister are healthy.

Previous history.—Breast fed; no previous disease; development normal.

Present illness.—On December the 13th, 1910, while acting as joiner's apprentice he was taking a rosewood plank downstairs when he was wounded by a splinter, which passed deep into the right thigh. It was not till the next day that the wound was dressed with peroxide of hydrogen and cauterised with tincture of iodine. On January the 1st, eighteen days after the accident, when the wound seemed healed, he noticed stiffness in the wounded leg, with convulsive movements from time to time and trismus during meals. The following days the trismus increased, and on the fourth day after the onset of the contractures the child was taken to hospital.

Condition on admission.—Jaws closed tightly, deglutition difficult, rigidity of the trunk; child also complains of pain in the spine. Fairly frequent convulsive movements. Contracture of the abdominal muscles. Hardly any fever, temperature only exceptionally as high as 38° C. Pulse very frequent—120, 130, 150. The patient was placed in a room draped in black and given a liquid diet and bromide and chloral enemata. January the 4th, the day of admission, first subcutaneous injection of 10 c.c. of anti-tetanic serum; dose repeated on 5th, 6th, and 7th. Very rapid improvement; fifth and last injection of 10 c.c. on the 11th (50 c.c. in all). Perfect recovery.

After the treatment the child complained of very severe pain in the right hip (perhaps serum arthralgia). To relieve him we ordered morphia (1 cgrm. in subcutaneous injection) and a liniment of chloroform and laudanum. Recovery was not delayed by this unpleasant occurrence.

This case as compared with the last shows that anti-tetanic serotherapy may succeed even when relatively moderate doses are given. It may succeed even after a single large dose, as the following case shows.

Case 3.—*Boy, aged* 12 *years; tetanus following wounds of the knees; subcutaneous injection of* 40 *c.c. of anti-tetanic serum; recovery.*

Boy, aged 12 years, admitted to my service at the Hôpital des Enfants Malades on May the 18th, 1909, for tetanus.

Family history.—Father died of phthisis; mother healthy; one brother died at one month, two twin sisters died at an early age, one sister, aged 8 years, under treatment for enlarged bronchial glands.

Previous history.—Born at full term. Bronchitis at 20 months, varicella at $3\frac{1}{2}$ years, aryngitis at 4 years.

Present illness.—He fell down about a month ago, causing injuries to his knees, which at present are almost healed and cause no pain. On May the 11th, three weeks after the accident, he felt a pain below the shoulders and then in the thighs. On the 13th onset of trismus and stiffness of neck. Taken to a children's dispensary he was regarded as a probable case of cerebro-spinal meningitis and sent to the Hôpital des Enfants Malades. On admission we found generalised muscular contracture, inability to open the mouth, stiffness of the neck and back, rigidity of abdominal muscles, and very painful attacks of contractures on the slightest stimulus. The diagnosis of tetanus was written on the patient's face.

The temperature was only very slightly raised—37·2°, 37·4°, 37·5° C. Pulse 100. Lumbar puncture gave issue to normal cerebro-spinal fluid. A subcutaneous injection of 40 c.c. of anti-tetanic serum from the Institut Pasteur was given on the day of admission to Hospital. Improvement during the following days. Serum erythema on May the 25th, seven days after injection. Recovery without further incident.

It should be noted that in these three cases, which ended in recovery, the incubation period was very long—eighteen, nineteen, and twenty days respectively. It seems that tetanus which rapidly ollows infection of the wound is more virulent than that of later onset.

In a girl, aged 13 years, who died in my service and whose case was published by A. Broca ('Arch. de Méd. des Enf.,' July, 1914), tetanus having followed a sloughing wound of the thorax due to the compression of a felt and plastic jacket for correction of scoliosis by Abbott's method, the incubation period was very short and the disease fulminating. The child died in less than forty-eight hours, in spite of subcutaneous injections of anti-tetanic serum.

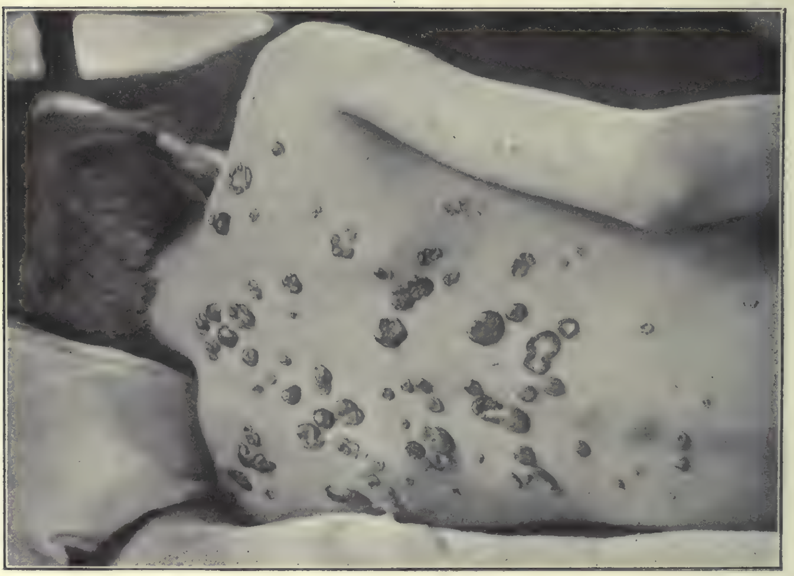
The duration of the incubation period should therefore be taken into account in forming a prognosis. With a long incubation period the course of the disease is long and the prognosis good, with a short incubation the course is rapid and the prognosis almost always fatal.

The same conclusions may be drawn from the recent communication of C. Walther on September the 29th, 1914, at the Académie de Médecine on "The Ætiology and Prophylaxis of Tetanus in Men wounded in War."

ACUTE PEMPHIGUS COMPLICATING SCARLET FEVER.

By J. M. Robertson-Ross, L.M.S.S.A.,
Assistant Medica Officer, Grove Fever Hospital, London.

A boy, aged 10 years, was admitted to hospital with scarlet fever on May the 27th, 1914, on the second day of the disease. The attack was moderately severe, and was complicated by cervical adenitis on the sixteenth day and right otorrhœa on the twenty-second day. On June the 25th, the thirty-second day of the disease, as the adenitis was subsiding a crop of four or five blisters appeared on the front of the right ankle, and the temperature rose to 102° F. As the eruption had not been noticed on the previous day when he had been bathed, it was at first thought that the right leg had been accidentally scalded. During the next twenty-four hours an extentive bullous eruption appeared on the back and to a less extent on the limbs. The lesions commenced as small, pink, slightly raised patches, with a ring of small vesicles at the periphery. These gradually increased in size and coalesced so as to form eventually oval or irregularly shaped bullæ. The mode of onset is well illustrated in the accompanying photograph, which shows the lesions in the various shapes, the ring formation being particularly well seen. On June the 29th the eruption was general on the back from the level of the sixth cervical to the twelfth dorsal spine, and bullæ were also present on the right shoulder, the antero-external surface of the right arm, the front of the right ankle, and outer side of the left leg. Subsequently they appeared on the left side of the forehead and spread over most of the scalp. The mucous membranes were at no time affected. Fresh lesions continued to appear until July the 8th. The fluid in the bullæ was at first clear, but afterwards tended to become turbid, but was never purulent. Two cultures were made; the first taken on June the 30th was sterile after twenty-four hours' incubation, the second, taken on July the 8th, yielded an abundant growth of staphylococci. A differential blood count made on June the 29th showed: Polymorphonuclears 71 per cent., large mononuclears 4 per cent., small mononuclears 4 per cent., eosinophiles 3 per cent.



Each bulla increased in size for about three days, when the largest of them was 2 in. by 1 in. in diameter. They then either ruptured and discharged their contents or else dried up and formed a scab without previous rupture. During the healing process secondary lesions appeared in the course of the discharging fluid, and it was noticed that these were bullous from the first without any preliminary erythema or vesicles at their periphery. On August the 11th, forty-eight days after the onset of the eruption, all the bullæ had disappeared, leaving erythematous stains with an area of clear skin in the centre. Throughout the attack the temperature remained irregular, varying between 99° and 102° F., and did not finally become normal till August the 9th. The general condition remained good throughout, and local pain and irritation were very slight. No local treatment was employed beyond the application of clean lint jackets and boracic dusting powder. Liquor arsenicalis, at first in 3 minim doses, subsequently increased to 8 minims, combined with Ferri. et ammon. cit. gr. v, was given internally *t.d.s.*

The patient was finally discharged in good health on September the 2nd, 1914, still showing the pink staining where the eruption had been.

The occurrence of a bullous eruption suddenly commencing in one region and rapidly assuming a fairly general distribution accompanied by an irregular pyrexia and running a course of little more than six weeks would seem to warrant a diagnosis of acute pemphigus. Though several cases of pemphigus have been observed after vaccination, I have not been able to find any mention of the association of pemphigus with any of the other specific fevers. The disease described by Leiner in this JOURNAL * under the name of pemphigus acutus contagiosus in many cases followed measles, but clinically it does not seem to have resembled the present case.

A CASE OF UNEXPLAINED ŒDEMA AND PEMPHIGUS IN CONVALESCENCE FROM SCARLET FEVER.

By R. LOY WILCOX, M.R.C.S., L.R.C.P.,
Assistant Medical Officer, South-Eastern Fever Hospital, London.

A GIRL, aged 13 years, was admitted to hospital for scarlet fever on November the 7th, 1913, on the third day of disease.

The attack was not severe and was followed by typical desquamation. On November the 29th, three days after she had been allowed to get up, she developed marked œdema of the ankles and wrists. Deep pitting was present. There were no other signs or symptoms except a slight petechial eruption, which was more or less general, but most marked on the thighs and legs. The œdema passed off in a few days, and the petechial rash soon faded. No cause for the œdema could be discovered. The heart was normal, and at no time did the urine contain any albumin. On December the 11th, two days after the child had been allowed to get up again, two large vesicles were found on the right foot, and a severe attack of pemphigus developed. The face, trunks and limbs were all affected, but the severest lesions were on the legs and arms, some measuring 1 in. in diameter.

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* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1908, vol. v, p. 371.

The condition waxed and waned, and many areas of the skin were affected more than once. Some improvement seemed to follow the use of liquor arsenicalis, which was given in 5 minim doses *t.d.s.* on January the 7th, and increased to 7 minims on January the 19th. As local treatment liquor carbonis detergens and subsequently lotio calaminæ were used, and the affected areas were covered with dry boracic lint.

Fresh bullæ continued to appear until February the 2nd, when only two small lesions remained on the left foot, and the child was sent home. Throughout the attack the patient's general condition was good, and the temperature remained normal.

The eruption broke out again soon after the child returned home, but subsequently became quiescent, and lately I have been unable to obtain any news of her.

The interesting features of this case are that the pemphigus occurred in convalescence from scarlet fever, that it was preceded by an unexplained œdema, and that otherwise the attack of scarlet fever was free from any complications.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, November the 27th, 1914.

The President, MR. T. H. KELLOCK, *in the Chair.*

Child with Tooth Erupted at Birth.—Dr. E. B. GUNSON showed a male infant, one of twins born at full term. The left lower median incisor was erupted at birth. On the tenth day the tooth, which was then loose and attached only by the gum, was removed as its presence interfered with suckling. The right lower median incisor had then also appeared through the gum. The child was well developed and presented no other abnormality. The fellow twin was normal.

Friedreich's Disease with Spastic Phenomena.—Dr. J. PORTER PARKINSON showed a boy, aged 13 years, the ninth of ten children; his mother's eleventh pregnancy terminated in a miscarriage. For three years before patient's birth the mother was very depressed and almost insane. Patient was a full-term child, healthy at birth, but before the age of three years had had scarlet fever, measles, chickenpox, whooping-cough, and diphtheria. He began to walk at three years, but never had walked well, and was never very intelligent. He began to stammer two years ago.

He was now a fairly well grown boy with a rather unintelligent expression. Speech indistinct, slurred and syllabic. Gait spastic, uncertain; slight difficulty in turning. Romberg's sign negative. The legs were held stiffly, the muscles hard and well developed; the foot showed marked pes cavus with some equinus; the great toe was hyperextended at the proximal joint, and the extensor tendon very prominent. There were marked knee and ankle clonus and an extensor plantar reflex. The arms were in every way normal, grasps equal, no ataxy of arms or legs. Cranial nerves normal, no nystagmus, and no changes in the fundi. Spine normal, and bladder and rectum not affected. Sensation normal. No similar disease in the family.

Tumour of the Upper Extremity of the Femur.—Mr. L. Bromley showed a boy, aged 12 years. The patient was admitted to hospital on June the 13th, 1914. A swelling of the right thigh had been noticed for the previous seven or eight weeks. He complained of pain in the right leg, especially after walking; on some days the pain was so severe that he was unable to walk. When he was aged 3 years he was said to have fractured the right femur; since then he had had intermittent pains of an aching character, which had increased lately.

On examination a hard swelling of the upper third of the right femur was felt. There was no definite margin, and no heat or tenderness. Movements of the hip-joint were free. Skiagraphic examination showed an endosteal growth of the femur.

On exploration the bone was found to be expanded and covered by normal periosteum; a thin layer of compact bone surrounded a mass of cartilage which had entirely replaced the medullary cavity. Microscopic examination showed it to be pure chondroma with no suggestion of malignancy.

Two Cases of Heart-block.—Dr. T. R. Whipham.—Case 1: Female infant, aged 2 years 2 months. The child was born at full term, and had always been backward. The first tooth was not cut until the age of nine months, and she did not sit up until she was a year old. Up to the present she had not walked or talked. She was a well-nourished child, with a good colour, and presented no clubbing of the digits. Pulse slow, full, and regular. The right side of the heart in the skiagram appeared to be enlarged, and the outline of the organ was almost globular. All over the præcordium a loud systolic bruit was audible, the maximum intensity being between the apex and the left sternal border, and extending up to the pulmonary area. The heart-rate was slow, but varied from time to time, the lowest recorded being 48 and the highest 80. The child was first admitted to hospital with whooping-cough, but even then the heart was only beating about 64 per minute, and at times the respirations were quicker than the pulse. Paroxysms of coughing, moreover, caused very little, if any, acceleration of the heart. No cardiac symptoms had at any time been observed. An electro-cardiogram showed a perfectly regular 2 : 1 heart-block. There was a polycythæmia of 8,400,000 red corpuscles per cubic millimetre and the hæmoglobin value was 110 per cent.

Case 2: A girl, aged 12 years. Except measles at an early age, she had had no illness. Six years ago it was first noticed that she had a slow pulse, but it was not until eighteen months ago that any cardiac symptoms occurred;

since then she had complained of pain around the heart on exertion. The pulse was slow, usually between 50 and 60 per minute, and slightly irregular in rhythm; the extreme rates noted had been 40 and 64. The heart was considerably enlarged, especially on the left side, and there was a heaving impulse in the fifth interspace well outside the nipple line. A systolic bruit was audible, with its maximum intensity in the fourth interspace near the sternum; occasionally at the apex and a little outside a slight diastolic whiff had been heard. The second sound in the pulmonary area was at times re-duplicated. An electro-cardiogram and a polygraph tracing showed a marked dissociation between the auricular and ventricular beats, and an irregularity in the rhythm of the latter. A subcutaneous injection of atropine sulphate ($\frac{1}{60}$ gr.) caused the ventricular rate to be increased from 40 to 60 per minute, but did not affect its arrhythmia.

Diabetes insipidus with Infantilism.—Dr. T. R. WHIPHAM showed a boy, aged 4 years, the sixth child in a family of eight, all of whom had been backward. He was bottle-fed, and cut his teeth late, and did not walk until he was two years old; he could not yet talk. Height, 2 ft. 9 in.; weight, 1 st. 6½ lb. About two years ago he started to pass a large quantity of urine, to complain of great thirst, and to lose flesh. On admission to hospital he was passing from 200 c.c. to 900 c.c. of urine *per diem*, but under general treatment and rest the maximum had been 300 c.c. in a day. The urine was very pale, of low specific gravity, and contained no abnormal elements.

Case of Giant Nævus.—Dr. J. D. ROLLESTON showed a girl, aged 7 years, with a pigmented, hairy and warty nævus and numerous accessory nævi. The principal nævus started in front, slightly internal to the anterior border of each sterno-mastoid, and passed backwards, occupying each posterior triangle of the neck and extending 1 in. below each clavicle. Behind it extended as a continuous sheet upwards to the external occipital protuberance, outwards to the acromion process and downwards to the spine of the twelfth dorsal vertebra, where it ended in a tapering point.

The pigmentation of the nævus was dark brown, interspersed with vitiliginous patches, and was interrupted at the periphery by linear areas of unpigmented skin running obliquely downwards and outwards. The skin of the pigmented area was sharply marked off, but was not raised above the level of the normal skin, and showed no sensory changes. There was no spina bifida. The nævus was covered by downy hairs mostly of a light colour, except in the interscapular region where they were darker. Several warty growths of the same colour as the pigmented skin were present in the cervical and upper dorsal area of the nævus, the largest being situated just below and to the left of the external occipital protuberance.

In addition to the principal nævus other nævi were scattered over the rest of the skin. The largest were situated on the right thigh and right buttock. Most of the lesions situated on the limbs were hairy, but a few were smooth. A few smooth nævi were present on the soles, but the palms were free. The fewest and smallest lesions were on the face.

There was no hereditary nor familial history of similar lesions, but there was a definite history of a maternal impression. During the third or fourth month of pregnancy the mother had been frightened by a black and tan dog which had tried to bite her husband, and had thrown her arms over her head. She had anticipated that the child would be marked, though her doctor had tried to persuade her to the contrary.

Splenomegaly improved by Antisyphilitic Treatment.—Dr. BERNARD MYERS showed a male infant, aged 1 year 11 months, admitted to hospital last June (then aged 18 months) for diarrhœa and wasting. His weight at that time was 9 lb. 8 oz.

When first examined in June he presented a very wasted appearance. The child was listless, anæmic, of an earthy complexion, and with a sunken fontanelle. Some signs of rickets were present. There were about six motions in the twenty-four hours. The temperature and pulse were normal on admission, while the respiratory rate was slightly raised. The spleen was enlarged, moderately firm, and extended to just below the level of the umbilicus. The edge of the liver was felt 1½ in. below the costal margin. No albumin was discovered in the urine, which was acid and of specific gravity 1020. The Wassermann and von Pirquet reactions were both positive.

The blood count on June the 17th was: Red blood corpuscles 3,040,000 per cubic millimetre; hæmoglobin 44·0 per cent.; leucocytes 14,000 per cubic millimetre; polynuclears 35·8 per cent.; lymphocytes 54·8 per cent.; large mononuclears 6·0 per cent.; transitionals 1·4 per cent.; myelocytes 2·0 per cent.; normoblasts 3·0 per cent.; megaloblasts 1·2 per cent.

A provisional diagnosis of splenic anæmia of infancy was made. Hydrarg. c̄ creta, ½ gr. *t.d.s.*, together with a bismuth mixture, were given. Some slight improvement only being noticeable, this treatment was stopped in favour of mercurial inunction over the region of the spleen. The diet consisted of milk in various forms, arrowroot, meat-juice, and small quantities of brandy. Distinct and steady improvement followed the inunctions. The diarrhœa gradually ceased, his appearance became healthier, and his face, body and limbs filled out. The spleen became noticeably smaller week by week.

On November the 20th a blood count showed: Red blood corpuscles 6,130,000 per cubic millimetre; hæmoglobin 100·0 per cent.; leucocytes 16,600 per cubic millimetre; polynuclears 57·4 per cent.; lymphocytes 19·6 per cent.; large mononuclears 16·8 per cent.; transitionals 3·0 per cent.; eosinophiles 3·2 per cent.; normoblasts 1·0 per cent.

The red blood corpuscles appeared normal in size and shape. Wassermann's reaction was positive, although not strongly marked.

Case of Double-retained Testicle in which the Left Testicle was transplanted to the Right Side of the Scrotum and the Right Testicle to the Left Side.—Dr. PHILIP TURNER.—A boy, aged 12 years, was admitted to hospital on May the 17th for double inguinal hernia with imperfectly descended testicles. Both testicles, which appeared to be ill-developed, could be palpated in the inguinal canals; they had never descended below the external abdominal rings. The following operation was performed: The right sac and spermatic cord were exposed by a small incision through the external oblique just above the internal abdominal ring. The hernial sac was separated from the vas and veins as far as the internal ring, and there ligatured. By traction on the distal part of the sac the testicle was drawn through the small incision in the external oblique. The sac was then ligatured immediately above the tunica vaginalis and removed. The remains of the gubernaculum were then transfixed, ligatured, and divided, the ends of the suture being left long. The testicle, enclosed in the tunica vaginalis, was now, except for its connection with the spermatic cord, quite free. An incision about an inch long was then made over the front of the left side of the scrotum. The free ends of the ligature transfixing the gubernaculum were then seized with Spencer Wells's forceps, which were then introduced through the incision in the external oblique, pushed along the inguinal canal, through the external ring into the right side of the scrotum. The ends of the forceps were then made to impinge against the scrotal septum. A small incision was now made on the forceps through the wound in the left side of the scrotum. The forceps carrying the ligature were pushed through to the left side and the ends of the ligature secured. The forceps were then withdrawn, and by pulling in the ligature the right testicle was drawn along the track made by the forceps along the inguinal canal through the scrotal septum to the left side of the scrotum. Both wounds were then closed.

The patient was readmitted two months later, and the left testicle was then transplanted to the right side of the scrotum by a similar operation.

No sutures were necessary for the fixation of the testicle in its new position, the contraction of the opening in the septum preventing its return and exercising a gentle continuous traction which was absent in the ordinary method of orchidopexy.

Mr. TURNER showed another case of double retained testicle in which the right testicle only had been transplanted. He proposed to transplant the left testicle later.

Seasonal Enlargement of the Parotid Glands.—Mr. PHILLIP TURNER also showed a boy, aged 14 years, who had had painful and tender enlargement of both parotid glands every spring and autumn for the last nine years. The other salivary glands were not affected and the boy showed no other abnormality except that he was unduly sensitive to cold.

Case of Cleido-cranio-dysostosis in which the Removal of the Outer Part of the Imperfect Right Clavicle relieved Severe Symptoms from Pressure on the Brachial Plexus.—Dr. F. J. POYNTON and Mr. H. MORRISTON DAVIES.—This patient, a girl, aged 20 years, was reported originally by Dr. Spriggs ('Lancet,' 1907, ii, p. 1599).

In December, 1913, she was shown by Dr. Poynton at the Clinical Section for an opinion as to the best method of treatment of severe symptoms pointing to pressure on the right brachial plexus.

Her work as a dressmaker had been interfered with by severe shooting pains down the inner side of the arm and over the front of the chest. There was marked loss of power in the right hand, and much circulatory disturbance. When the shoulder was depressed the right pulse was diminished in volume, a sign which assisted in the exclusion of syringomyelia, a condition which has been described in association with this form of dysostosis.

Mr. Davies removed the outer fragment of the clavicle, and when the patient left the hospital there was already clear improvement. She had been completely free of the severe neuralgic pains, her hand had recovered power, and she had resumed her occupation. The only complaint now was of a dull ache in both shoulders, brought on by the long hours during which she sat in a position sewing over her work that tended to makes the shoulders "over-stoop." This was relieved by sitting up with the shoulders braced back, and was of an entirely different nature to the former trouble, which was caused by the inner end of the outer fragment of the right clavicle hitching under the outer end of the inner one.

Pseudo-rachitic Achondroplasia.—Dr. FREDERICK LANGMEAD showed a female infant, aged 6 months, whom he had first seen when she was 9 weeks old. Many signs of rickets were present, but the legs were disproportionately short compared with her body, and her finger-tips, with arms extended, reached only to just below the iliac crests. The provisional diagnosis of achondroplasia had therefore been made, although the head, face, and hands had not the characteristic appearance.

Keratosis Follicularis Spinulosa.—Dr. J. L. BUNCH showed a case in a boy, aged 4 years. The lesions had first been noticed about eighteen months previously on the neck and later on the arms, back, and abdomen. They consisted of small acuminate papules which were more perceptible to the touch than to the eye. There were no inflammatory phenomena.

Acholuric Jaundice.—Dr. C. O. HAWTHORNE showed a girl, aged 1 year and 3 months, a firstborn child, said to have been jaundiced since birth. She had jaundice, considerable enlargement of the spleen, some enlargement of the liver, no bile in the urine, and normal stools. Blood examination showed: White cells, 14,500; polymorphs, 44·8; small lymphocytes, 47·2; large mononuclears, 6·8. The blood serum contained bile pigment.

Paramyoclonus multiplex.—Dr. HAWTHORNE also showed a boy, aged 6 years, said to have been "jerky" since birth. There were frequent quick clonic contractions, most marked in the abdominal muscles, but visible also in the shoulders, upper arms, thighs, and crenaster muscles, and to some extent in the face. The contractions were bilateral, but the two sides were not always affected simultaneously. There was no history of rheumatism, chorea, or epilepsy.

Philadelphia Pediatric Society.

October the 13th, 1914, W. N. BRADLEY, M.D., President.

Unusual Rachitic Deformities.—Dr. THEODORE LE BOUTILLIER showed a coloured girl, aged 10 years, whose deformities were first noted when two years old. Now almost every bone in her body showed deformity. Her head was that of an ape; the eyes protruded markedly under her retreating forehead. Her height was much reduced owing to bowing of long bones and spinal curvature. Mentality was about that of a child of six years.

Molluscum Contagiosum.—Dr. FRANK CROZER KNOWLES presented this child, an infant with a dozen lesions on the lower portion of the face and neck. Contagiousness, differential diagnosis, pathology, and treatment were briefly discussed.

Infantile Syphilis.—Dr. H. LOWENBERG showed an infant, aged 2 months, with a ham-coloured rash confined to extremities, intense anæmia, and enlarged spleen. The blood showed 30,000 leucocytes, with increase in small lymphocytes. Mother and infant gave positive Wassermann, while father and three other children were negative. The mother showed no evidence of syphilis. The ætiology in this case remained a mystery. In spite of active treatment with neo-salvarsan and iron, eye symptoms developed.

Palate Deformity.—Dr. S. M. HAMILL showed a baby with deformed palate and attacks of cyanosis. It took the bottle well, with very little regurgitation.

Deformity of Hands and Feet.—Dr. BRADLEY showed an infant with deformed hands and feet.

Dr. J. T. RUGH said that the deformity was most unusual in type. He had observed a series of cases in one family, in which four generations had shown club feet in every child, with club hands in some of them besides. Maternal impressions had been established anatomically by Fossetti, through the presence of nerve fibres in the cord and placenta. They were not only possible, but very probable in many cases.

Dr. YOUNG considered this case remarkable and unique in that it exhibited both the absence of parts and the fusion of those present. The absence of parts was best explained by the Ray theory—that it was due to the arrest of the budding extremities—but the fusion was more difficult to explain, and the association was unusual.

Dr. BRADLEY added that it was impossible to prove maternal mental impression in this case.

Cretinism.—Dr. JOSEPH FLEITAS showed a boy, aged 8 years, with cretinism and possible hyperplasia of the hypophysis. The genitalia were very markedly developed. An X-ray of the skull showed enlargement of the sella turcica. Great improvement followed the administration of thyroid.

Spastic Diplegia.—Dr. J. H. W. RHEIN showed a family of four with spastic diplegia. Two were boys aged 14 and 10 years, and the girl was aged 8 years. A younger sister, aged 5 years, as yet showed only increased knee-jerks. Another sister died at 14, having had the disease ten years. Family history is absolutely negative. Symptoms began with spasticity in the legs, with the arms affected in about a year, followed by mental changes associated with speech disturbances. Sensory, sphincter, and eye symptoms were absent. Wassermann reaction was negative in all, as in the father.

Osteosarcoma of Femur.—Dr. E. E. GRAHAM reported this case, in a boy aged 11 years, and Dr. W. F. MANGES demonstrated the X-ray plates. He also referred to two similar cases, treated by the X-rays and Coley's fluid, one four and the other two years ago, with recovery. He advised similar treatment in this case.

Dislocation of the Coccyx.—Dr. RUGH showed this girl, aged 14 years, who fell, in May, 1913, while roller skating, striking her spine on the curb. Pain was most marked when rising after having been seated a while. Rectal examination showed the coccyx dislocated forward on the sacrum. Dr. H. A. Wilson operated in September, 1914, uncovering the sacrococcygeal articulation, removing a posterior wedge-shaped piece, and placing a mattress suture of silk, drawing the two cut surfaces together, thus tilting the coccyx downward and backward. Patient was kept in bed several weeks. Recovery was uneventful. This operation was preferable to removal of the coccyx.

Congenital Club Foot.—Dr. YOUNG showed this child, with congenital club foot cured by operation, to illustrate the effect of orthopædic treatment after operation. He insisted that it was quite as important to treat these cases as it was to perform the operation, and good results could only be obtained by combining both forms of treatment. The operation consisted of open division of the posterior tibial tendon and subcutaneous division of the anterior tibial, plantar fascia, and tendo Achillis. The operation was performed at the time the child was twelve months old, about the time it began to walk. The deformity was corrected and held in cast for three weeks; the brace was then applied and massage treatment given, also active Swedish movements for one year, special attention being paid to the peroneal or weakened muscles. A night brace was also useful in holding the foot in position all night. In answer to Dr. Graham's question Dr. Young added that the best time for this operation was about one year. Some surgeons operated before, but the tendons were so small that results were not always good. Braces might be applied before the baby was a year old.

Congenital Elevation of the Scapula.—Dr. J. H. Jopson showed X-rays and photographs of two cases of Sprengel's deformity. One was a boy, aged 2 years, in whom the right shoulder was affected, the condition being associated with a practical absence of the latissimus dorsi muscle and the post-axillary fold. There was little limitation of motion, and no operation was attempted. The other case, a girl, also had the right shoulder affected. The right scapula was 2¼ in. higher than the other, rotated upward and outward, the lower angle being drawn toward the spine and the vertebral border almost in contact with the spine. The vertical diameter of the right scapula was smaller than the left. Abduction of the right arm was limited; the arm could not be raised above the shoulder. The left lower extremity was more than an inch longer than the right. At operation a supernumerary bone was found to articulate with the vertebral border of the scapula at the junction of the middle and lower thirds, a real joint lined with cartilage being present. The other end of this metacarpal-shaped bone was fused with the lamina of the seventh cervical vertebra. This bone was excised, the muscles attached to the upper end of the scapula divided and sutured at a higher level. Improvement in abduction and elevation was prompt, almost to normal, with marked lessening of deformity. Dr. Jopson reviewed the theories of the causation of this congenital malformation.

Dr. W. E. Lee showed a girl who had come to the Children's Hospital for Colles' fracture. Her head was held in peculiar position, rigid, without flexion or extension, and but a few degrees of rotation. Both shoulders were elevated and fixed. The posture was typical of tuberculosis of the cervical vertebræ. Just below the very prominent seventh cervical vertebra was another bony prominence, attached to the inner edge of the left scapula at the level of the spine. This limited any movement of the left scapula. The left humerus could not be raised to more than an angle of 90 degrees with the body. X-rays showed this bony prominence to articulate with the edge of the scapula and spines of the upper dorsal vertebræ. The process was exposed by a boomerang excision. Starting along the upper edge of the scapula it passed around the bony process and ended near the angle of the scapula. Attached fibres of the latissimus dorsi were separated, and a distinct articulation was exposed between the inner end and the edge of the scapula. Further isolation of the process showed the inner end attached to the arching processes of the first dorsal vertebra. This process was apparently an elongation from the spine of the first dorsal vertebra, which articulated with the edge of the scapula. The process was disarticulated at its outer end and the spine severed with a bone-cutting forceps at its origin from the arching processes of the first dorsal vertebra.

Dr. Jopson believed that, although it might be an intra-uterine malformation, it was more probably reversion to a primitive type, the presence of the supernumerary bone in a large proportion of cases indicating its atavistic origin.

Abstracts from Current Literature.

Medicine.

Diphtheria in the Metropolitan Asylums Board Hospitals ('*M.A.B. Report*,' 1913).—5076 cases were admitted in 1913 as compared with 4844 in 1912 (*v.* British Journal of Children's Diseases, 1914, xi, *p.* 35). Exclusive of purely bacteriological cases the percentage mortality was 6·5, the lowest on record, as compared with a ratio of 30 per cent. before the introduction of antitoxin, and 2·4 per cent. below the average rate for the last ten years. Diphtheria is usually more fatal to males than females, but in 1913, out of 55 females under one year, 15 died—a percentage of 27·3, whereas out of 54 males 8 died—a percentage of 14·8. The total mortality at all ages was 6·8 per cent. for males, and 6·2 per cent. for females. On 245 cases tracheotomy, on 39 intubation, and on 24 both operations were performed, among whom there were 69, 1, and 10 deaths respectively. The percentage error in cases admitted was 15·6. Among 1009 wrongly certified as diphtheria were 699 of tonsillitis, 64 of laryngitis, 23 of rhinitis, and 140 of broncho-pneumonia, 25 had no obvious disease or were not diagnosed. Paralysis occurred in 7·85 per cent., albuminuria in 23·28 per cent., otitis in 4·10 per cent, serum rashes in 31·24 per cent., joint pains in 3·16 per cent., and abscesses at the injection site in 0·72 per cent. 141 or 2·86 per cent. contracted scarlet fever, 36 or 0·73 per cent. measles, and 18 or 0·36 per cent. whooping-cough. J. D. Rolleston.

On diphtheria ('*Semana Med.*,' 1914, xxi, *p.* 183).—**Cabrera** gives a lengthy account of his observations from nearly 3000 cases of diphtheria. The article contains nothing unfamiliar. In 80 per cent. of cases the bacteriological and clinical diagnosis were in accord. The clinical symptoms are a better guide in prognosis than the bacteriological findings. Inoculation should be always undertaken in preference to tracheotomy. Serum should be injected on the clinical evidence without waiting for the laboratory report. He prefers von Behring's serum and his maximum initial dose is 3000 units. The large doses of serum which have been recommended in paralysis have proved useless in his hands. M. D. Eder.

Diphtheria in an infant, aged 15 days ('*Semana Med.*,' 1914, xxi, *p.* 799).—**Amante** and **Pepa** report the case because diphtheria is rare under three months; in their ten years' experience at the Children's Hospital at Buenos Ayres this is the youngest child attacked. The clinical and bacteriological examination left no doubt as to the diagnosis. The secretions from the nose, eyes, and the throat showed Löffler's bacillus. The condition was bad and the child unable to suck. 1500 units of Behring's serum were injected immediately, when seen on the second or third day of the illness. Death took place the next day. M. D. Eder.

Diphtheria bacillus carriers (*'Monatsschr. f. Kinderheilk.,'*) 1914, xiii, *p.* 113).—**G. van't Hoff** examined the throats of a large number of children after their discharge from the Diphtheria Block at the Charité in Berlin. He found that diphtheria bacilli were almost always present in cases that had been discharged less than five months previously. In many children the bacilli were still present seven months after discharge, and in some cases a few bacilli were found after eight, nine, or even ten months. Sometimes the first or second examination was negative, probably owing to incomplete evacuation of the tonsillar lacunæ in which the bacilli persist longest, while later cultures proved positive. J. D. Rolleston.

Scarlet fever in the Metropolitan Asylums Board Hospitals (*'M. A. B. Report,'* 1913).—15,010 cases were admitted in 1913 as compared with 9883 in 1912 (*vide* British Journal of Children's Diseases, 1914, xi, *p.* 36). The mortality was 1·25 per cent. The percentage error of diagnosis was 6·0. Among the 963 wrongly certified as scarlet fever were 78 of German measles, 31 of chickenpox, 226 of tonsillitis, and 241 of erythema; 160 had no obvious disease or were not diagnosed. The commonest complications were otitis (8·43 per cent.), albuminuria (7·89 per cent.), secondary adenitis (4·74 per cent.), rheumatism (2·85 per cent.), and nephritis (2·18 per cent.); 261 or 1·82 per cent. had relapses, 195 or 1·36 per cent. contracted diphtheria, 212 or 1·48 per cent. varicella, and 118 or 0·82 measles.

J. D. Rolleston.

Some observations on the last epidemic of scarlet fever in Warsaw (*'Wien. klin. Rundschau,'* 1914, xxviii, *p.* 13).—**Nisenson** regards the continuance of scarlet fever during the last few years in Warsaw as due to the mistrust of the public in the hospitals, the insufficiency of free beds, and the difficulty in the admission of young children. The severe cases he treats by serum which he injects as soon as possible. He has used the sera of Palmirski, Moser (antistreptococcic), and Tavel (polymorphic). At the same time camphor and milk are injected. In nasal complications no syringing should be allowed; he finds a serum gives the best results. One should not be content to disinfect the home once only with formaline.

M. D. Eder.

Attempts to produce scarlet fever in monkeys (*'Arch. of Int. Med.,'* 1914, xiii, *p.* 909).—**C. Krumwiede, jun., J. M. Nicholl, jun.,** and **J. S. Pratt** refer to the experiments of Cantacuzène (*vide* British Journal of Children's Diseases, 1911, viii, *p.* 230), Levaditi, and others (*ibid.*, 1912, ix, *p.* 520), and record their own results with monkeys and dog-faced baboons. Faucial inoculation of streptococcus cultures on unfiltered exudates and discharges from scarlet fever cases, as well as intra-peritoneal injections of infiltrates of such exudates and discharges and of large quantities of blood, gave negative results. J. D. Rolleston.

The peritoneal complications of scarlet fever (*'Bull. de l'Acad. de Méd.,'* 1914, lxxi, *p.* 748).—**P. Teissier** alludes to the case recently reported by Touraine and Fenestre (*vide* British Journal of Children's Diseases, 1910, vii, *p.* 465), and records five personal cases. Two occurred in children, aged 7 months and 6 years, who died during the eruptive period, and one in a child, aged 15 years, who died during desquamation. The other two were cases of suppurative streptococcal peritonitis, which occurred during the first week of the disease. One of these was a girl, aged 12 years, with gangrenous streptococcal angina, and the other was a woman, aged 28 years, without any pelvic lesions. The pathogeny of scarlatinal peritonitis is that of the other complications of scarlet fever; the action of the scarlatinal virus is possible, though not demonstrated, while the action of the habitual agent of secondary infection, the streptococcus, is certain. J. D. ROLLESTON.

Cardio-vascular troubles in scarlet fever (*'Paris méd.,'* 1913–14, II, *p.* 165).—**Nobécourt** and **Milhit** discuss the subject as follows: (1) Endocarditis and pericarditis. Endocarditis in scarlet fever is much rarer than was once supposed, occurring in only 0·58 per cent. of cases. It is often latent. It may be an early or late phenomenon. It is rare for it to be fatal or to clear up entirely; more frequently it becomes chronic. Pericarditis may be present alone or in association with endocarditis. It may be dry or accompanied by a sero-fibrinous or purulent effusion. As a rule it is latent and rapidly subsides, but in purulent cases it is almost always fatal. Both endo- and pericarditis are usually due to secondary infection. (2) Functional disturbances of the myocardium. These are not always the result of definite anatomical lesions. Scarlatinal myocarditis is rarely found post mortem. Tachycardia, even in normal cases, is present from the onset and is relatively constant. The pulse frequently exceeds 120, even in mild cases. In cases that are severe from the start the pulse may reach 180 or even 200. Bradycardia, recently described by Monier-Vinard and Meaux-Saint-Marc (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1914, XI, *p.* 317), is occasionally met with. Disturbances of rhythm (sinus arrhythmia), which is very common in children, is often exaggerated in convalescence. Extra-systoles, which are less frequent in children than in adults, are due either to hypertension associated with scarlatinal nephritis or to a myocardial lesion. A myocardial syndrome characterised by cyanosis, dyspnœa, scanty and albuminous urine, and other signs of heart-failure may occur. Cases of sudden death have been recorded by Gouget and Dechaux (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1909, VI, *p.* 512), Weill and Mouriquand (*ibid.*, 1912, IX, *p.* 34), and others. In some cases the histological lesions of the myocardium are slight or absent, and lesions are found in the suprarenals (*ibid.*, 1910, VII, *p.* 410, and 1914, XI, *p.* 276). (3) Cardiac disturbance in scarlatinal nephritis. Early dilatation of the heart and enlargement of the liver may occur in scarlatinal nephritis, and the clinical picture may more closely resemble cardiac than renal disease. Gallop rhythm is almost constant in scarlatinal nephritis. (4) Cardiac sequelæ of scarlet fever. Scarlatinal endocarditis may become chronic, though not so frequently as was once thought. The most frequent lesion is mitral regurgitation; more rarely there is mitral stenosis or aortic regurgitation. In very rare cases embolism of cardiac origin may cause hemiplegia. As the result of functional disturbances, the myocardium is often left specially susceptible so that it is readily dilated by various causes.

J. D. ROLLESTON.

Meningeal conditions in scarlet fever and scarlatinal uræmia (*'Ann. de Méd. et Chir. inf.,'* 1914, XVIII, *p.* 475).—**Mauriac** and **Philip.**—A boy, aged 8½ years, who had had scarlatina a month previously, was suddenly taken with vomiting and epileptiform movements of the left side. The urine contained a large amount of albumin, and the blood and cerebro-spinal fluid a great excess of urea. Coma and fever supervened, the second lumbar puncture showed a pneumococcal meningitis without definite symptoms, and death took place. A girl, aged 16 years, had a mild attack of scarlet fever without albuminuria, and seemed quite convalescent when, after exposure to cold, sudden dyspnœa came on with cyanosis and rapid pulse. The urine showed a large amount of albumin with blood-cells and casts. There was œdema of the lungs. The child died in three days. The authors discuss the possibility of a latent scarlatinal meningitis.

J. PORTER PARKINSON.

The isolation of scarlet fever (‘*Edinburgh Med. Journ.*,’ 1914, XII, *p.* 214).—**W. Robertson.**—For the last three years all cases of scarlet fever at the Leith Isolation Hospital have been discharged after thirty to thirty-five days' detention. Desquamation of the soles was no objection to discharge if the patient had been in hospital four weeks. The return case rate during this period of three years remained low, ranging from 1·7 to 2·8 per cent.

J. D. ROLLESTON.

Return cases of scarlet fever (‘*Monatsschr. f. Kinderheilk.*,’ 1914, XII, *p.* 673).—**W. Knöpfelmacher** and **R. Hahn.**—According to previous observers, the return case rate has ranged from 3·6 per cent. to 6·5 per cent. During the triennium 1910–12 the return case rate at the Caroline Children's Hospital in Vienna has been 5·5 per cent., 7 per cent., and 10·3 per cent. respectively. The children were almost always kept six weeks in hospital. In only one of the primary cases had there been rhinorrhœa on leaving hospital. The ear and throat in each case had always been normal on discharge. The great majority of the return cases occurred within the first fortnight of the discharge of the primary case. No relation existed between the character of the primary and that of the return cases. The return cases might have had a wider and decidedly severer attack than the primary. It is most probable that the primary case is infectious owing to its naso-pharynx and buccal cavity being loaded with the virus of its own scarlet fever, or more frequently that of its neighbours, especially those recently admitted. The present method of isolating scarlet fever is therefore unsuitable. Lesage's plan of individual isolation for the first twenty days is too expensive and irksome, but the writers recommend that the convalescent should be separated from the acute cases. J. D. ROLLESTON.

Measles in the Metropolitan Asylums Board Hospitals (‘*M. A. B. Report*,’ 1913).—3400 cases were admitted in 1913 as compared with 4314 in 1912 (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1914, XI, *p.* 38). The relatively high mortality (12·6 per cent.) was due to the fact that admissions were limited to children of the poorest classes or to urgent and necessitous cases recommended by the medical officers of health. As in 1912, the mortality was higher in males than in females. Among 203 wrongly certified as measles were 74 of German measles, 36 of erythema, and 21 with no obvious disease. The commonest complications were broncho-pneumonia (16·22 per cent.), otitis (15·99 per cent.), enteritis (3·31 per cent.), and conjunctivitis (2·94 per cent.) ; 85 or 2·10 per cent. contracted diphtheria, 83 or 2·07 per cent. whooping-cough, and 80 or 1·98 per cent. scarlet fever.

J. D. ROLLESTON.

Generalised subcutaneous emphysema in uncomplicated measles (‘*Bull. et Mém. Soc. Méd. Hôp. de Paris*,’ 1914, XXXVIII, *p.* 39).—**H. Méry**

and **L. Girard** record two personal cases in children, aged 6 and 7 years, with three others from literature in patients, aged 7, 12, and 18 years respectively. In every case the cough was more severe than in ordinary measles, but none had broncho-pneumonia, with which subcutaneous emphysema in measles is usually associated. The only functional symptom was a certain degree of dyspnœa. The emphysema reached its height in three or four days, and then disappeared entirely. All recovered. Two theories have been advanced to explain this form of emphysema. (1) According to the laryngeal theory, ulceration of the mucosa of the ventricle of the larynx takes place, and the violent cough forces the air through the laryngeal fissure into the perilaryngeal, mediastinal, cervical, and facial tissues. (2) According to the mediastinal theory, the alveoli or bronchi give way, and the air, driven by the cough, passes into the perilobar tissues and hence into the mediastinum, neck, and face. **M. Bacqué** (*'Thèses de Paris,'* 1913–14, No. 345), in a thesis inspired by Méry, discusses the subject in a similar manner.

J. D. Rolleston.

Rubella (*'Zeitschr. f. Kinderheilk.,'* 1914, x, *Orig., p.* 54).—**H. Saito** studied 105 cases in an epidemic of rubella among Japanese children at Port Arthur and came to the following conclusions: (1) The incubation period varies from fifteen to twenty-three days. (2) A rise of temperature above 100° F. is not uncommon, both in the prodromal period and in the eruptive stages. It does not last longer than three days and usually rapidly falls within two. (3) A papular eruption surrounded by a definitely anæmic areola is fairly characteristic of rubella. (4) Enlargement of the glands is an almost constant symptom, and enlargement of the spleen is not uncommon. (5) A transient positive diazo-reaction, indicanuria an albuminuria may occur. (6) Slight diminution in the hæmoglobin content of the blood as the eruption fades, increase in the number of neutrophiles, and a diminution of leucocytes at the height of the eruption occur. Eosinophilia is frequent, especially when the eruption is fading. (7) A tuberculin cutaneous reaction that has almost disappeared may become distinct again at the height of the eruption. J. D. Rolleston.

German measles: an experimental study (*'Arch. of Int. Med.,'* 1914, xiii, *p.* 913).—**A. F. Hess,** during an epidemic of rubella in an infant asylum, examined the blood bacteriologically in four cases. In three the rash had been present for less than twenty-four hours, and in one it had been present for thirty-six hours. No growth was obtained in any case. Four *Macacus rhesus* monkeys were inoculated by intra-peritoneal injections of 3 to 8 c.c. of blood obtained from different cases. In none did a rash occur, and in only one was there a rise of temperature. Examination of the blood of several of the children exposed to infection showed that in almost every case there was a definite increase in the lymphocytes before the appearance of the eruption. Hess thinks that this premonitory lymphocytosis may help to separate infected from non-infected children, and so limit the spread of an epidemic. The lymphocytosis at the time of appearance of the rash will also help to distinguish rubella from scarlet fever, which is associated with an increase of polynuclear cells in its early stages (*cf.* British Journal of Children's Diseases, 1909, vi, *p.* 280). J. D. Rolleston.

Vaccinal allergy in the eruptive fevers (*'Thèses de Paris,'* 1913–14, *No.* 347).—**Mlle. S. Stock.**—The writer's observations confirm those of

Netter (*v.* British Journal of Children's Diseases, 1913, x, *p.* 543). In measles vaccinal anergy is the rule. It is present the day before the eruption, persists throughout the eruption, and disappears on the fourth day. Vaccinal anergy in measles has a great diagnostic value, for in affections simulating measles the disappearance of allergy is very inconstant. In rubella vaccinal anergy never occurs. The prognostic value of vaccinal anergy is not less than its diagnostic value, for the disappearance of vaccinal allergy shows that the organism has lost its means of defence against infection. J. D. Rolleston.

Whooping-cough in the Metropolitan Asylums Board Hospitals (*'M.A.B. Report,'* 1913).—1044 cases were admitted in 1913 as compared with 1731 in 1912 (*v.* British Journal of Children's Diseases, 1914, xi, *p.* 38). Only poor children were admissible. The mortality was 13·1 per cent. Among 55 wrongly certified as whooping-cough were 22 cases of bronchitis, 5 of broncho-pneumonia, and 15 with no obvious disease. The commonest complications were broncho-pneumonia (16·20 per cent.), otitis (8·85 per cent.), convulsions (2·96 per cent.), stomatitis (1·64 per cent.), and albuminuria (0·91 per cent.). 72 cases or 6·54 per cent. contracted measles, 30 or 2·73 per cent. scarlet fever, and 16 or 1·45 per cent. chicken-pox. J. D. Rolleston.

The ætiology of pertussis (*'Arch. of Ped.,'* 1914, xxxi, *p.* 567).—**A. W. Williams.**—The specific ætiological factor in pertussis is not yet fully established for the following reasons: (1) The Bordet-Gengou bacillus, though present under the best and most favourable conditions as in well-to-do families or in special hospitals, is not found in the majority of cases. Mixed infection plays an important part in pertussis, very few cases remaining uncomplicated throughout the disease, so that unless it is present in very great numbers, this bacillus is very easily overgrown by other bacteria and is very difficult to isolate. (2) The complement-fixation test with the serum of human beings who have, or have had, pertussis, is not so uniformly positive as Bordet and others claim. (3) A specific lesion in pertussis has not been established, though Mallory claims that the presence of a certain number of bacilli between the epithelial cells of the trachea and bronchi constitute such a lesion. J. D. Rolleston.

Clinical and sociological aspects of whooping-cough (*'Arch. of Ped.,'* 1914, xxxi, *p.* 572).—**J. L. Morse** states that whooping-cough is a most serious and fatal disease. In 1906 in a registration area comprising somewhat less than half the population of the United States, 6324 children died of it. Ninety-five per cent. of the deaths occurred during the first five years, and the great majority during the first two years of life. Morse recommends that pertussis should be made notifiable, and the same penalties be imposed for failure to report it as in the case of other notifiable diseases. The sputum and vomit should be treated as in pulmonary tuberculosis. Children under five years should be separated from the patient, who should be sent to a special hospital if necessary. Quarantine should be enforced until after cessation of the paroxysmal cough, and in any case until six weeks after the onset. As the vitality of the Bordet-Gengou bacillus outside the body is very slight, formal disinfection is unnecessary. Thorough cleaning and airing of the premises is sufficient. The lymphocytosis which occurs during the catarrhal and paroxysmal stages is of considerable diagnostic value. J. D. Rolleston.

Meningocele, a rare complication of whooping-cough (*'Monatsschr. f. Kinderheilk.,'* 1914, XIII, *p.* 139).—**R. Weigert.**—An infant, aged 4 months, contracted whooping-cough. The attack was not very severe, but a meningocele developed at the site of the anterior fontanelle during the paroxysmal stage. There were no convulsions either during whooping-cough or subsequently, and pressure on the tumour produced no effect. The fontanelle gradually became smaller and pushed the tumour back, but at the age of 2 years and 10 months it still admitted the tips of the fingers, and the formation of the tumour could be felt. The delay in the closure of the fontanelle was doubtless due to the meningocele, as no signs of rickets were present. J. D. ROLLESTON.

Diagnosis of whooping-cough by the complement-deviation test (*'Journ. Amer. Med. Assoc.,'* 1914, LXII, *p.* 1008).—**A. Friedlander** and **E. A. Wagner** have tried the complement-deviation test in a limited number of cases of whooping-cough. Their method was as follows: A small amount of blood was drawn into a small test-tube or a Wright capillary tube. This was kept at room temperature or in the incubator until coagulation had taken place. The serum was then separated by the centrifuge, and two drops were used in each test. Hæmolytic system: The Noguchi system was used, because of its delicacy and the small amount of material, especially serum, required. Antigen: A pure culture of the Bordet-Gengou bacillus was obtained, and sub-cultures were made on Bordet's medium, ascitic fluid, agar and broth serum. The antigen was made from 72-hour growths in ascitic fluid agar by washing off the colonies with sterile salt water. An emulsion was made, and the bacteria again washed in salt water. From this a standard suspension was made, and ·1 c.c. and ·2 c.c. of this used in the test. Controls: In each test known normal and known positive controls were used. In each series of tests the hæmolytic system was tried out in the usual manner, using a water-bath at 37° C. for incubation. After primary incubation for half an hour, the amount of amboceptor indicated by the preliminary test was added to the final test-tube, and the tubes were again incubated in the water-bath. Final readings were taken within the following hour. Their results showed:

	No.	Positive.	Negative.	Percentage.
Cases whooping	18	18	0	100
Normals	8	0	8	100
Early cases (catarrhal stage)	3	2	1	66·6
Not whooping, but course otherwise typical	1	1	0	100

Nine of the positive cases were in the first week of the whoop, and three early in the second week. In no case was there a positive reaction when the patient had not had either a pertussis infection or a history of pertussis within four years. The one case in the catarrhal stage which did not give a positive reaction was tested at the very beginning of the cough. The two other cases both developed typical whooping-cough. T. R. WHIPHAM.

Prognosis of whooping-cough in hospital (*'Thèses de Paris,'* 1913–14, *No.* 387).—**A. Schlemmer.**—During a period of three years' observation (1912–14) at the Hôpital Bretonneau, out of 259 cases of whooping-cough, 76 died, a mortality of 29 per cent.; 68 of these deaths were due to broncho-pneumonia and the rest to measles. In the Hôpital Hérold, where individual isolation is practised, the mortality ranged from 18 to 25 per cent. The high mortality of whooping-cough in hospital is attributed to the children being admitted too late, as 92 per cent. recover of those who have been treated in hospital from the beginning of their attack (*cf.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1907, IV, *p.* 454).

J. D. ROLLESTON.

Typhoid fever in early life ('*New York Med. Journ.,*' 1914, C, *p.* 205). —**J. P. C. Griffith.**—(1) In infancy the onset on an average lasts three to four days. Vomiting is an early symptom; diarrhœa is more frequent than constipation. After the attack has reached its height there is not much loss of appetite, abdominal distension is frequent, epistaxis rare; nervous depression is rare, excitation common. The temperature may rise to 103° or 105° F. and remain so for a week or more; in other cases it is very irregular. The final fall may be by crisis, and at any rate is always quicker than in adults. The duration of the attack is three weeks or less. (2) In early childhood (two to six years). The attack is milder as a rule than in adults; the onset is not so sudden as in infancy, but is often abrupt, and may be ushered in by convulsions. In the eruptive stage nervous symptoms are little marked; diarrhœa is less frequent than in infancy or later childhood. The duration is about two to three weeks. (3) Later childhood: The disease approaches the adult type, especially after the age of ten years. The symptoms of the typhoid state are more likely to develop, but not to the extent seen in the adult. Complications: Bronchitis is common, laryngitis not infrequent; epistaxis and hæmorrhage from the bowel rare. Relapse is perhaps more frequent than in the adult. The prognosis is good on the whole. The treatment is the same in any age, due consideration being given to the kind of food administered.

F. R. B. ATKINSON.

Typhoid fever with regular course in an infant, aged 7 months ('*Le Nourrisson,*' 1914, II, *p.* 156).—**M. Péhu** and **A. Favre-Gilly** record a case in a recently weaned infant, where the source of infection could not be determined. The temperature chart was absolutely typical, rose-spots were remarkably abundant, the spleen was enlarged, there was a moderate degree of diarrhœa, and Widal's reaction was positive in 1 in 100. No complications occurred. The case is of interest, as Maignou (*v.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1914, XI, *p.* 321) has recently stated that typhoid in the infant is usually atypical.

J. D. ROLLESTON.

Acute typhoidal inflammation of the gall-bladder in childhood ('*Prag. med. Woch.,*' 1914, XXXIX, *p.* 279).—**Bittner** describes three cases of acute inflammation of the gall-bladder in typhoid seen in children. It is a rare and very dangerous complication, usually occurring in the third or fourth week of the illness. The clinical symptoms were rise of temperature, vomiting, abdominal pain localised over the gall-bladder region and swelling of the gall-bladder, which in one case was very marked. If the symptoms do not promptly abate an operation is called for. In two cases the result was successful; the third case was a child brought in with perforating peritonitis; at the operation the pus was found to be yellow, not fæculent, and a severe gangrenous, ulcerating cholecystitis was present; the child died a few hours later.

M. D. EDER.

Prognosis of typhoid fever in children in the Paris hospitals ('*Thèses de Paris,*' 1913–14, *No.* 430).—**G. Andréoli.**—This thesis is based on the study of 1295 cases drawn from 10 different services in the Paris hospitals. The mortality was 6·14 per cent, the lowest mortality occurred between five and eight years of age, and the highest between eleven and fourteen. Complications occurred in 10·6 per cent., affecting the digestive, respiratory, and circulatory systems in order of frequency. The prognosis of meningeal symptoms varies according as they indicate merely a meningeal reaction or a true typhoid meningitis, and is determined by lumbar puncture.

J. D. Rolleston.

Paratyphoid fever in children (*'Gaz. internaz. di med., chir., etc.,'* 1914, *p.* 457).—**L. Sironi** records cases in a boy, aged 2½ years, and a girl, aged 9 years. In both the serum test was positive; the blood culture was positive in the boy and negative in the girl. In both the spleen remained of normal size, though their livers became considerably enlarged. Both recovered. The remarkable features of the boy's case were (1) the appearance of well-marked meningeal symptoms with a normal cerebro-spinal fluid; (2) a generalised macular eruption on the eleventh day. The girl had three slight attacks of intestinal hæmorrhage.

J. D. Rolleston.

Tetanus inoculated by the felt employed in the correction of scoliosis by Abbott's method (*'Arch. de Méd. des Enf.,'* 1914, xvii, *p.* 601). —**A. Broca** and **M. Houdré** allude to two fatal cases reported by Kirmisson to the Académie de Médecine on June 2, 1914, in which the excoriations produced by the felt of the plastic jackets had been infected by tetanus bacilli, and record a personal case in a girl, aged 13 years. Abbott's plaster jacket was applied on March 17, and pieces of felt were introduced at regular intervals, the last piece being inserted on May 12. On May 20 the child was admitted to hospital with tetanus fully developed. On removal of the jacket a slough was found on the right shoulder caused by the pressure of the felt. Death took place next day. J. D. Rolleston.

A contribution to the study of the rheumatic infection (*'Practitioner,'* 1914, xciii, *p.* 445).—**F. J. Poynton, C. D. S. Agassiz,** and **J. Taylor.**—An analysis based on 350 fatal cases, 155 of whom were males and 195 females, shows the following results: Males under twelve 101, males over twelve 54; females under twelve 149, females over twelve 146. Heredity 26 per cent. Age incidence: Rheumatism is at its worst from the sixth to the twelfth year, and by far the majority of deaths occur before the twentieth year. In 100 consecutive cases over half had had an attack before puberty; 24 per cent. died in the first attack under twelve years of age; in those over twelve only 3 per cent. The infection reaches the pericardium by the blood capillaries and the changes begin within the pericardium, which was affected in 215 cases of 250 under twelve years of age (86 per cent.); the friction sound could be heard in 80 per cent. Of 250 cases the mitral valve was damaged in 247, the aortic in 102, the tricuspid in 78, and the pulmonary in 6. Thirty cases suffered from malignant endocarditis, 14 others were under twenty years of age, the most frequent combination being disease of the mitral and aortic valves. In only three cases of 250 was death due to myocardial failure with no valvular change. Pleurisy and mediastinitis were present in 50 per cent., peritonitis in 5 cases.

F. R. B. Atkinson.

Obscure manifestations of rheumatism in childhood (*'Arch. of Ped.*, 1914, xxxi, *p.* 13).—**J. A. Colliver,** examining 1000 Californian boys of the age of puberty, found evidence of rheumatism in 5·2 per cent. He regards this figure as probably too low, owing to the difficulty in the early detection of the disease. He emphasises that the onset of the infection in children is slow, insidious, but progressive. Amongst well-known early signs of the disease he describes a cutaneous manifestation which he has found in the early stages of the infection, and which, in its pre-desquamative stage, has not been previously described. The condition consists of crops of a pin-point eruption, appearing usually on the palmar surfaces of the hands or feet, affecting chiefly the toes and the tips of the fingers. The appearance of these spots is accompanied by itching. Later minute white papules appear, which develop into blisters and finally desquamate.

REGINALD MILLER.

Still's disease (*'Birmingham Med. Rev.,'* 1914, lxxv, *p.* 83).—**O. Holden** publishes a thoroughly studied example of this malady in a boy, aged 5 years, in whom arthritic symptoms had been present for eighteen months. Several points of interest are noted. Carious teeth were present. A mild leucocytosis (18,000 to 20,000) was observed with a proportionate increase in lymphocytes. This blood picture, although common in the disease, is not usually given in descriptions of it. In addition, an apical presystolic bruit was heard. Treatment by means of thyroid extract, anti-syphilitic remedies, iron and arsenic, and finally ileo-sigmoidostomy produced no improvement in the condition of the joints. Good illustrations are given. The author, from consideration of the skiagrams of the joints of the patient, states that there is no relationship between Still's disease and rheumatoid arthritis, without defining the condition he alludes to under the latter term.

REGINALD MILLER.

Still's disease and arthritis deformans (*'Arch. of Ped.,'* 1914, xxxi, *p.* 414).—**J. B. Manning** and **F. J. Fassett** accept the view that Still's disease is a form of infective arthritis, and that in it bony changes are of later development than arthritic and peri-arthritic changes. They report a case in which the source of infection appeared to lie in periodontal suppuration.

REGINALD MILLER.

Dermatology and Syphilis.

Diphtheria of the skin (*'Journ. Amer. Med. Assoc.,'* 1914, lxiii, *p.* 398).—**F. C. Knowles** and **L. D. Frescoln** state that diphtheria of the skin may occur in several forms, in addition to the false-membrane type, the ulcerative, gangrenous, eczematous, impetiginous eczema-like, pustular, impetiginous, ecthymatous, vesicular (varicella-like), bullous, dermatitis herpetiformis-like, tumours and abscesses. Two cases of the bullous impetigo type are reported. (1) A girl, aged 4 years, had always been healthy. Three days before she came under observation the outbreak appeared on the body, with an accompanying sore throat. There were observed on the trunk, the extremities, and the buttocks two dozen pustular and bullous lesions varying from a pea to a pigeon's egg in size. The lesions were discrete and of a whitish-yellow to an orange-yellow colour. The large bullous lesions had an inflammatory areola, and on rupture were found to be multilocular and filled with a thick, cheese-like yellow pus. The throat was swollen, the glands of the neck enlarged, the patient restless, and there was a high temperature. Examination showed membranous white patches on both tonsils. Cultures were made from an unruptured lesion on the lower abdomen and also from the throat. Diphtheria bacilli were obtained from each location, the one of type D and the other of type C, according to Westbrook's classification. Staphylococci were also found in the cultures. The patient was given 3000 units of antitoxin and was sent to hospital. Death ensued two days later. (2) A sister of patient 1, aged 8 years, who had been unusually free from sickness, developed, the day previous, sore throat and an eruption of the skin. The right tonsil was covered by a white membrane. The temperature was moderately high. Scattered over the trunk and the extremities were about a dozen lesions, mostly the size of a pea, but a few with the proportions of a hazelnut. They were of the same character as her sister's; the inflammatory areola, however, was less marked and the contents were of a thinner consistency. Cultures were made from the tonsil and from an unruptured lesion on the leg. Diphtheria bacilli were found in each, corresponding to the C type of Westbrook. Staphylococci were also found. The patient was given 1250 units of antitoxin and was transferred to hospital. Although the patient developed scarlet fever while in the hospital, she finally recovered.

T. R. Whipham.

A case of multiple gangrene in a child, aged 6 years (*'Austral. Med. Journ.,'* 1914, I, *p.* 61).—**J. A. Smeal.**—The boy suddenly developed purpuric spots on the arms and knees, ears and cheeks. Left lobar pneumonia ensued, and, after this had cleared up, gangrene of the feet set in and spread rapidly to the legs. Nearly two months after the right leg was amputated below the knee-joint and a week later the left leg at a similar spot. Recovery took place. F. R. B. Atkinson.

Pellagra in early childhood (*'Am. Journ. Dis. Child.,'* 1914, VII, *p.* 124).—**W. Weston.**—Ætiology: It may occur at any age from a few weeks, but is not frequent under three to four months. It affects both sexes equally. No climate or country is exempt. Most of the attacks occur in spring, early summer, or autumn. The sun aggravates the rash. It is usually found amidst insanitary surroundings. The cause is unsettled; some consider maize as the cause, others believe it is conveyed by a simulium. Symptoms: These are well known and need no description. Diagnosis: A child with red tongue, fissured lips, diarrhœa, headache, insomnia, paræsthesia, and brisk or absent knee-jerks should suggest pellagra. The rash may develop later. Prognosis: The younger the infant, the less favourable the outlook. Treatment: Nurslings should be weaned from pellagrous mothers. Change of diet and environment is advisable. Hydrotherapy ranks high; local remedies and tonics are valuable, especially iron and arsenic. F. R. B. Atkinson.

The causes and treatment of eczema in infancy and childhood (*'Arch. of Ped.,'* 1914, XXXI, *p.* 735).—**R. G. Freeman.**—Apart from external irritation, the disease is usually due to gastro-enteric derangement. The food should be cut down to caloric requirements, and stewed fruits and cream forbidden. The parts affected should be constantly covered with non-irritative applications. F. R. B. Atkinson.

Epidemic alopecia areata (*'Brit. Journ. Derm.,'* 1914, XXVI, *p.* 207).—**Haldin Davis** describes an epidemic of 174 cases of alopecia areata in an orphanage. With the exception of two foster-mothers and a servant-girl aged 17 years, all the patients were girls under twelve years. The patches were much more like ringworm than ordinary alopecia areata to the naked eye, but no fungus could be found in the affected hairs nor in scrapings from the scalp. The patches were not entirely bald, as in alopecia areata, even in the centre, but were covered by stumps broken off very close to the surface, which did not come out easily, as in alopecia areata, nor break easily, as in ringworm, but required the application of considerable force. Microscopically they were swollen at the free end, not cut sharply across, and within the hair at the site of fracture was an opaque mass, the nature of which could not be determined. Rapid recovery followed daily washing of the scalp and painting the patches with liniment of iodine. The epidemic was probably due to some organism, but its nature could not be ascertained. J. D. Rolleston.

Comparison of results of the luetin reaction and the reaction of Wassermann in hereditary syphilis (*'Ann. de Méd. et Chir. inf.,'* 1914, xviii, *p.* 465).—**Blechmann, Delort,** and **Tulasne** state that the intradermal reaction of Noguchi is difficult to practise in children's consultations owing to its complexity, and the significance of its reaction can only be established by a series of observations. Negative reactions have no significance; also the activity of luetin is not constant. According to statistics the reaction is obtained in 70 per cent. of syphilitic cases. In some cases where Wassermann is negative, Noguchi's reaction has been positive. The reaction is often not very definite, and may be due to hypersensibility of the skin in the child. It is often negative in cases of hereditary syphilis which have been vigorously treated, while the Wassermann still continues to be positive. To sum up, the writers consider Noguchi's reaction much inferior to that of Wassermann. J. Porter Parkinson.

General atrophy in heredo-syphilis without apparent syphilitic lesions (*'Thèses de Paris,'* 1913–14, *No.* 369).—**V. Dragoesco** records 18 cases, 14 of which are personal, of heredo-syphilitic infants whose only symptom during life was a progressive atrophy. Under mercurial treatment 12 recovered and 6 died. Out of 5 on whom an autopsy was held, 2 showed specific lesions in the viscera, and in 3 no such changes were found (*cf.* British Journal of Children's Diseases, 1910, vii, *p.* 414).
J. D. Rolleston.

A case of syphilitic arthritis (*'Brazil Medico,'* 1914, xxviii, *p.* 173).—**Barbosa** saw a child with swelling of the right wrist and sinuses on the dorsal surface. There was no inflammation, and the general condition was good. The pus was sterile. An arthrotomy was carried out, and the wound soon healed, but the joint continued swelling. Signs of syphilis were noticed; after anti-syphilitic treatment the wrist became of normal size with good movements. But the lower part of the ulna was extremely painful; a resection of a segment of the shaft was made which gave a good result. There are two skiagrams of the joint. M. D. Eder.

A study of hereditary lues of the nervous system (Friedreich's symptom complex) (*'Jahrb. f. Kinderheilk.,'* 1914, lxxix, *p.* 519).—**A. Spiecker** describes the history of a family, the father and mother of whom gave a negative Wassermann. The first and fourth child were apparently healthy, while the second and third showed marked signs of Friedreich's ataxia. He considers from this, as well as from a study of some of the literature, that hereditary lues can produce a disease very similar to hereditary ataxia; but it is doubtful whether it is a true Friedreich's disease.

F. R. B. ATKINSON.

A case of general paralysis in a boy, aged 10 years (*'Jahrb. f. Kinderheilk.,'* 1914, LXXIX, *p.* 24).—**A. Collett** describes a case of this disease which began at the age of seven. The child suffered from hereditary syphilis. The post-mortem appearances are described in detail and a general *resumé* of the affection given. F. R. B. ATKINSON.

A case of juvenile general paralysis of the insane (*'Austral. Med. Journ.,'* 1914, III, *p.* 1567).—**W. L. T. Lind.**—The patient was a boy, aged 14 years at death, and the post-mortem examination revealed all the changes associated with this disease. F. R. B. ATKINSON.

Juvenile paresis treated by the intra-spinal injection of salvarsanized serum (*'Journ. Amer. Med. Assoc.,'* 1914, LXII, *p.* 1888).—**C. E. Riggs.**—A boy, aged 8½ years, was the second child in a family of five, the first having been still-born. The father contracted lues at seventeen, and according to his statement infected his wife. The blood-serum in his case gave a positive reaction, while his wife, on the other hand, presented a negative Wassermann in both blood-serum and spinal fluid. The pressure of the latter was increased. Both the Noguchi and the Nonne tests were negative, as was the Lange colloidal gold reaction. There were twenty-six lymphocytes to the cubic millimetre. Physicians who had seen this woman at the time of her supposed infection were of opinion that it was luetic. The blood-serum in two younger children, aged 5½ years and 5 months, respectively, reacted negatively, while a third, aged 2½ years, gave a positive Wassermann in the blood-serum. The entire family, aside from the patient, gave no clinical evidence of syphilitic infection of the central nervous system, nor were there any symptoms of congenital syphilis in the other children. Nothing abnormal was observed in the patient until the fourth year, when it was noticed that his memory was failing and his face had a vacuous expression. He was sent to school in his seventh year but was unable to learn the simplest things. He was severely punished by his teacher because of his being so unruly and difficult to control. At this time also his walking became difficult, and he used his hands in a clumsy manner. The father stated that the deterioration, both mental and physical, had been very rapid during the past year. When first seen he acted in a silly manner; he could not feed himself and needed constant oversight, and he talked like a young child. Examination showed Argyll-Robertson pupils, exaggerated knee-jerks, with ankle-clonus and Babinski in both feet. There was marked Rombergism. There was no nystagmus or epileptiform seizures; the background of the eye was normal. There were no signs of congenital syphilis. Serobiologic findings were increased pressure in the spinal fluid and positive Wassermann in both blood-serum and spinal fluid, the latter in all dilutions down to 0·05 c.c. Lange's colloidal gold test gave the characteristic curve of paresis. Noguchi positive; Fehling's normal; lymphocytosis seventy-two to a cubic millimetre. The patient has received eight intravenous injections, each of 0·25 grm. of salvarsan, followed the next day by an intra-spinal injection of 30 c.c. of 40 per cent. solution of salvarsanized serum. The serobiologic reduction has been very slight. The pressure of the spinal fluid is normal; lymphocytes three to the cubic millimetre. Blood-serum is less positive, spinal fluid unchanged. The paretic curve of Lange's colloidal gold test remains unchanged. Clinically, improvement has been more noticeable. The boy can now feed himself; his silly actions and vacuous expression have disappeared; he is much brighter mentally, requires less oversight, observes things much more than formerly, shows some interest in games and talks much more normally. His gait is greatly improved. Yet, notwithstanding all this apparent improvement, he has just had his first epileptiform seizure. T. R. WHIPHAM.

Reviews.

THE CHILD'S DIET. By J. SADLER CURGENWEN, L.R.C.P., M.R.C.S. Second Edition. 1914. London: H. K. Lewis. Pp. 115. Price 2s. 6d. net.

THE object of this little book is to provide the parents and guardians of children with simple instruction in the matter of feeding infants and children; and we doubt if such a work is any less necessary now than ten years ago, when the first edition was published. The writing of such a book must be no easy task. How far may a principle be pressed, what weight may be attached to various exceptions, must be problems which face the author in page after page. Above all, it must be difficult to avoid a certain superiority of knowledge over that of one's readers which is calculated to shame the mother who has failed in a task so apparently simple as feeding her children correctly.

The present author has been very successful in avoiding these difficulties and in this he has been much helped by his gifts for concise and clear writing and his ability to lay stress on the important points which he wishes to emphasise. His advice is on very sound common-sense lines and he is free from fads. And if here and there an undue dogmatism and a strained simplicity make their appearance, we do not think that they in any way diminish the value of the book for the purpose for which it is written.

R. M.

OBITER SCRIPTA, THROAT, NOSE, AND EAR. By A. R. FRIEL, M.A., M.D., Hon. Physician for the Nose, Throat, and Ear General Hospital, Johannesburg. Bristol: John Wright & Sons, Ltd., 1914. Pp. 40. Price 2s. 6d. net.

THIS is quite a useful little book, written in a chatty way. It contains but three chapters, the first relating to tonsil hæmorrhage, electrolysis for vasomotor rhinitis, hysterical aphonia, histology of aural discharges, and the like—a miscellaneous collection. The second chapter deals with zinc ionisation, which Dr. Friel considers ideal for chronic middle-ear suppuration. The third and last section discusses the treatment of ozœna.

M. Y.

MEDICAL AND SURGICAL REPORTS OF THE EPISCOPAL HOSPITAL. Vol. II. Philadelphia: Press of Wm. J. Dornan, 1914.

THIS volume, like its predecessor (*v.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1914, xi, p. 144) contains a large number of instructive papers by members of the visiting and resident staff. Among those of pædiatric interest are the following: "Superficial Gummata," by Warren Walker, with illustrations of cases of hereditary syphilis; "Primary Tuberculosis of the Patella, Excision, and Myoplasty," by E. G. Allkarder, in a boy aged 11 years; "Congenital Ankyloblepharon," by Harold G. Goldberg; "A Case of Lues with Labyrinthine Involvement," by John P. Gallagher and J. Walker Moore, in a boy, aged 14 years, successfully treated by neo-salvarsan; and "Imperforate Rectum," by Ashley P. C. Ashhurst, in which proctoplasty was performed when the child was fourteen days old and was followed by a secondary operation four years later to close a false anus. J. D. R.

DR. M. H. GORDON'S REPORT TO THE LOCAL GOVERNMENT BOARD ON AN EXPERIMENTAL INVESTIGATION IN RELATION TO MUMPS OR EPIDEMIC PAROTITIS. Reports of the Local Government Board: Public Health and Medical Subjects (New Series, No. 96). 1914. London: T. Fisher Unwin. Price 1s. 6d.

THIS valuable report is divided into two parts. In the first three sections of the first part the author gives a general description of mumps and its complications, discusses the clinical pathology and histological changes in the parotid gland, and reviews previous work on the ætiology of the disease. In the fourth section he relates his own experiments. Ten monkeys, an equal number of M. Cynomolgus and M. Rhesus being used, received an intra-cerebral injection of a filtrate of saliva from a series of cases in the acute stage of mumps. Four died, one developed an illness from which it recovered, and five were apparently not affected. The symptoms, which were those of meningeal irritation, developed in one to two days after injection. The autopsy showed a variable degree of lymphocytic meningitis, well-marked hyperæmia of the central nervous system, with a few small hæmorrhages into the grey matter, degeneration in some of the nerve cells, and increase of the glia cells. The monkey which survived longest showed acute interstitial parotitis, together with interstitial hepatitis and fatty degeneration of the liver and kidneys.

Dr. Gordon concludes that mumps is due to a filtrable virus comparable to that of poliomyelitis, smallpox, typhus, and other acute specific fevers.

The second part of the report contains an account of a fatal illness of children associated with acute interstitial parotitis. Between May and September, 1913, twelve children, aged from 10 months to 9 years, were admitted to St. Bartholomew's Hospital with pyrexia, diarrhœa, vomiting, and collapse. All died in from twenty-four hours to twelve days. Post mortem the most frequent change found was enlargement of the mesenteric lymph glands. Histologically the most striking feature was acute interstitial parotitis, which was present in eleven cases, with one doubtful exception. Experiments on monkeys by injection of emulsions of the central nervous system or of the parotids proved negative. The nature of the virus could not, therefore, be determined. J. D. R.

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Original Articles.

A CASE OF CHRONIC LYMPHOID LEUKÆMIA WITH MUCH TEMPORARY BENEFIT FROM BENZOL TREATMENT.*

By H. D. Rolleston, M.D., F.R.C.P., and J. D. Rolleston, M.D.

A boy, aged 6½ years, was admitted on December the 11th, 1913, to the Victoria Hospital for Children, suffering from general debility and swelling in the neck of eight months' duration.

Previous health.—He had had measles twice, the second attack eight months before admission and followed by pneumonia. Otherwise he had been exceedingly healthy.

The *family history* did not contain anything of importance.

History of present illness.—Eight months ago, during his recovery from the second attack of measles, his mother noticed several lumps in his neck, these got progressively larger, but were never painful.

On admission the patient was pale, anæmic, constipated, listless, and was obviously very ill. There were numerous hard enlarged painless glands in the cervical, parotid, submaxillary and occipital regions, axillæ and groins. There was some dyspnœa, but *x*-ray examination of the mediastinum did not reveal any enlarged glands. The heart was slightly enlarged and a systolic apical murmur was present. The spleen was distinctly palpable on deep inspiration. The eyes were swollen and puffy, the forehead somewhat œdematous, and the superficial veins in that region dilated.

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* The case was shown on two occasions at the Royal Society of Medicine, 1914, vii, (Children's Section), pp. 71, 129.

Examination of the blood pointed to lymphoid leukæmia—large lymphocytes being in great excess. The total leukocyte count was then 60,000.

On December the 29th, benzol treatment was commenced with an initial dose of ♏vi *per diem*. On January the 10th it was increased to ♏xii *per diem*, and on January the 25th to ♏xiv. This dose was continued until February the 12th, when the benzol was stopped altogether. The accompanying chart shows the progressive diminution in the total leucocyte count during the treatment. The patient's general condition appeared to be greatly improved; lassitude and weakness disappeared, his appetite improved, and the œdema of the head passed away. On the other hand the spleen remained practically unchanged in size, the glandular enlargement did not become less, and the patient did not put on weight satisfactorily. After the benzol was omitted from the treatment the leucocyte count was still taken weekly and at one time was as low as 2900. About a week after the benzol had been stopped, a purpuric rash appeared on the forehead. As benzol poisoning causes purpura hæmorrhagica, this rash was regarded as a manifestation of mild benzol poisoning. On March the 4th, as the patient appeared to be extremely well and was running about the ward all day, he was transferred to the Convalescent Home at Broadstairs. On April the 2nd he was re-admitted to hospital. The lymphatic glands were found to be distinctly harder and a trifle larger. The patient's general condition was decidedly worse. He was exceedingly languid and very dyspnœic.

The total leucocyte count was 123,000, the small lymphocytes being the predominant cells present. Benzol ♏ix *per diem* was again given, and in ten days' time the count had fallen to 15,000. This marked decrease was also accompanied by an improvement in his general condition. On April the 16th, the benzol was again omitted, and on April the 20th, the leucocyte was found to be 20,000, and on April the 30th, 29,400.

On May the 11th the child was put on benzol ♏xij *per diem*, but later in the day the temperature rose to 101·2° F.; the whole face became œdematous, with a purpuric rash on the right cheek and an offensive nasal discharge. A culture from the throat showed the presence of numerous diphtheria bacilli, and the child was therefore transferred on May the 13th to the Grove Hospital, Tooting, where 15,000 units of anti-diphtheritic serum were given. A smear from the mouth showed a very various flora, chiefly cocci, only a few fusiform bacilli and spirilla, not more than would be found in any infective condition of the mouth. No diphtheria bacilli were found in smears or cultures from the mouth or nose. The condition of the face suggested cancrum oris, and, though the stomatitis improved considerably under the local application of salvarsan, the child passed into a septicæmic state and died on May the 20th. Blood-examination by Dr. E. B. Gunson showed a well-marked leucopenia —1400 leucocytes on May the 14th and 1600 on May the 15th.

At the autopsy on May the 21st there was no obvious enlargement of the submaxillary, cervical, tracheo-bronchial, or mesenteric lymphatic glands. The epiglottis was much thickened and so were the ary-epiglottidean folds. The lungs were normal. The heart was normal except for some thickening of the mitral valve. The liver (29¼ oz.) and spleen (2 oz.) did not show any obvious change. Kidneys (3 oz. each) were pale, with numerous small hæmorrhages on the surface.

A microscopical examination of the organs was made by Dr. Stanley Wyard, who reported as follows :

" The submaxillary gland, the liver, and the mitral valve were all normal. Nowhere throughout any of the specimens is there any leucocytic infiltration such as is found in lymphoid leukæmia. The kidneys show cloudy swelling, the change being most marked in the cells lining the tubules as far as and including the descending limb of the loop of Henle. The glomeruli and the blood-vessels appear quite normal. The spleen presents no abnormality except that the perivascular spaces are very densely packed with lymphocytes. The epiglottis is thickened by an increase in the fibrous tissue and a small round-celled infiltration of its anterior surface. The bone-marrow contains very few cells and their place seems to be taken by a fibrillar substance showing affinity for acid stains. The origin of this fibrillar substance is apparently from a few multipolar cells which send out branches in all directions. A few leucocytes are present, but the majority of the cells are large and round, with a small nucleus—the ordinary marrow-cell. No myeloplaxes can be found."

It should be added that the lymphatic glands showed considerable endothelial proliferation which did not appear to one of us (H. D. R.) to point to lymphadenoma. Some writers would probably regard the change as " myeloid transformation," but it is probable that this

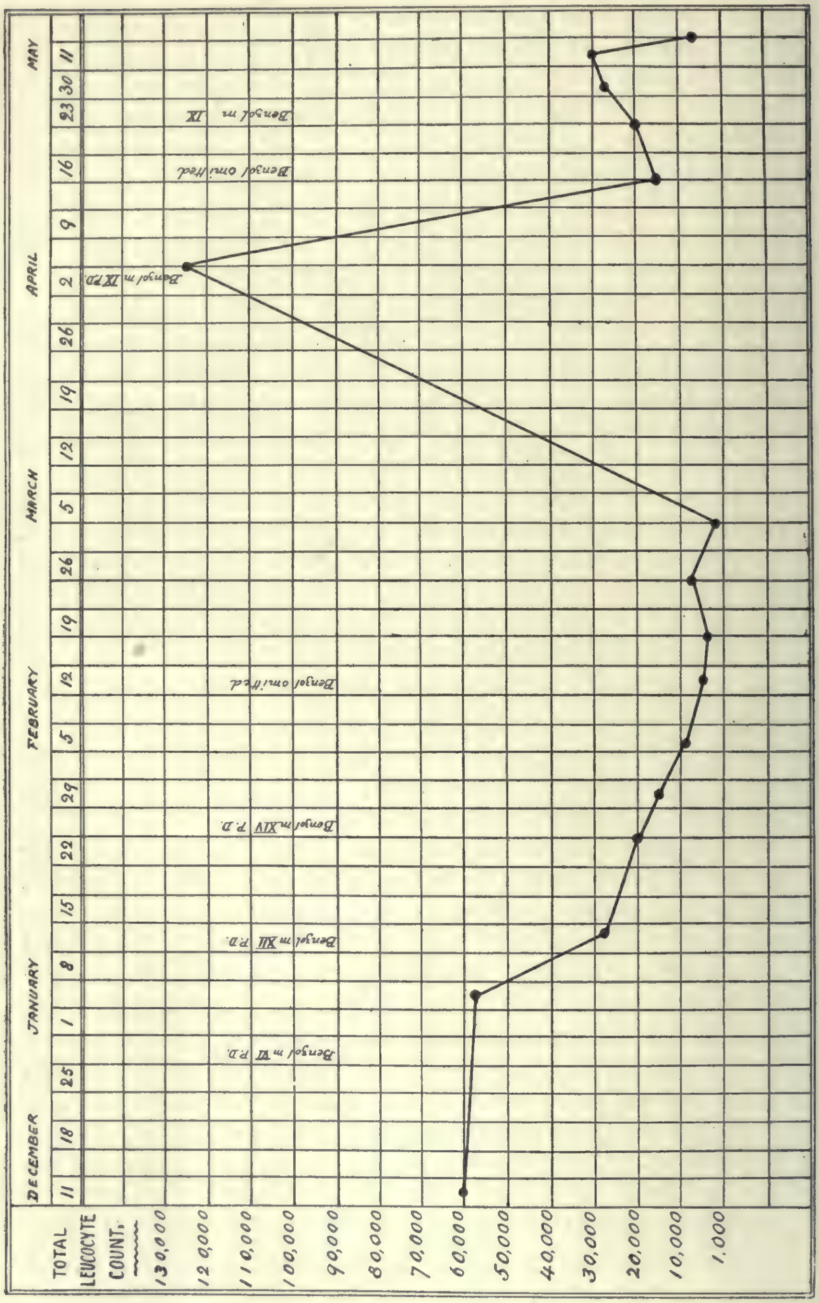

Chart showing the total leucocyte count in a case of chronic lymphoid leukæmia treated by benzol.

Table showing the Blood Counts at Intervals during the Treatment.

	Total leucocytes.	Lymphocytes.		Polymorphonuclears.		Hyaline.	Transitional.	Myelocytes.	Hæmoglobin.	Total reds.
		Large.	Small.	Neutrophils.	Eosinophils.					
		Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.		Per cent.	
1913.										
December the 11th	60,000	54	16·5	25	0·5	3	1	1 seen	—	—
1914.										
January the 5th	57,000	53	30	13	0	3·5	0·5	0	—	—
„ „ 12th	26,000	41·5	46	10	0	1·5	1	Large number	40	4,300,000
„ „ 23rd	20,000	26	24	39	1	7	3	1 seen	50	3,560,000
„ „ 29th	15,000	18	44·5	29	1	4	3·5	3 seen	45	3,368,000
February the 5th	9,000	39	29	27	1	3	1	1 seen	50	3,462,000
„ „ 12th	4,500	28·5	34	32	0·5	2	2·5	1 seen	60	3,300,000
„ „ 18th	3,400	41	12·5	39·5	2	3·5	1	2 seen	55	5,000,000
„ „ 25th	7,000	51	14	34	0	1	0	0	—	4,500,000
March the 4th	2,900	32	29·0	35	0·5	1	2·5	4 seen	60	3,856,000
April the 4th	123,000	19	38	43	0	0	0	7 seen	62	5,000,000
„ „ 15th	15,000	19	41	35	0	4	1	2 seen	58	4,384,000
„ „ 20th	20,000	25	39·5	32	1·5	1	1	0	70	5,024,000
„ „ 30th	29,400	39	35	22	2	2	0	7	55	4,804,000
May the 11th	30,000	35	50	14	1	0	0	0	50	4,000,000
„ „ 14th	1,400	—	—	—	—	—	—	—	—	—
„ „ 15th	1,600	—	—	—	—	—	—	—	—	—

proliferation of the endothelium lining the sinuses and covering the trabeculæ may lead to the production of large lymphocytes.

REMARKS.

The treatment of leukæmia by benzol was originated by von Korányi (5), who based it on Selling's (9) clinical and experimental observations that benzol poisoning produces leucopenia which persists after the cause is removed. Clinically, benzol poisoning produces purpura hæmorrhagica, aplastic anæmia, almost complete absence of blood platelets, and progressive leucopenia. In Selling's two fatal cases the total leucocytic count fell to 480 and 140 per cubic centimetre. Benzol appears to inhibit the leucoblastic tissues.

Barker and Gibbes (1) have recently collected fourteen cases of myeloid and three cases of lymphocytic leukæmia treated with benzol, and since then Parkes Weber (11) reported the failure of benzol in a man with myeloid leukæmia, and Calvert (3) a case of chronic lymphoid leukæmia successfully treated with benzol; in his patient, a man, the total leucocytic count gradually fell from 128,000 to 6000. Korányi, at the International Congress in London, 1913, referred to eighty known cases of leukæmia treated by benzol and to twenty-three papers on the subject. The effect of benzol appears to be less rapid than that of *x*-rays exposures. Milne's (6) experiments on dogs showed that in small doses benzol stimulates both erythroblastic and leucoblastic tissues. If these doses are persisted in for some time the leucoblastic tissue is worn out and the leucocytes decrease. Clinically he tried the treatment in seven cases though in only three did he continue it long enough to justify any conclusions. He found that it acted equally well both in the lymphoid and myelogenous types. In moderate doses it not only destroyed circulating leucocytes and prevented the formation of new cells in the leucoblastic tissues, but also stimulated erythrocyte formation and so tended to increase the red cell and hæmoglobin counts. It was not, however, definitely curative, as a relapse soon occurred when the drug was stopped. He thought the treatment should be avoided when the case was very acute with fever and a very high count, also in nervous subjects and particularly in cases with a high degree of leukæmic retinitis.

The terminal leucopenia in the present case, though remarkable, is not unparalleled. Spiegler (10) has recently reported a case and quoted others from the literature in which the leucocytes in myelogenous leukæmia dropped almost to zero before death. In Spiegler's own case they numbered 1400 and then 400, and in two others they fell from 998,000 to 1720 and from 56,000 to 5300 and then to 200.

The occurrence of bucco-pharyngeal lesions in leukæmia which formed the terminal episode of the present case has received special attention from Continental writers. Gilbert and Weil (4) describe pseudo-scorbutic and anginal forms of leukæmia; Wechselmann and Hirschfeld (12) state that noma may be a prodromal symptom, the blood changes occurring later. A case of Vincent's angina with destruction of the uvula (7) recently reported by one of us (J. D. R.) which died four months later of lymphoid leukæmia was probably an instance of this kind. Boudet (2) has found from a study of the literature that stomatitis or angina exists in 66 per cent. of the cases. In sixty-one cases there was stomatitis only, and in thirty-six angina only, and in twenty-one both affections coincided.

The presence of diphtheria bacilli in gangrenous conditions of the mouth and throat which clinically cannot be regarded as diphtheria has been noted by one of us (J. D. R.) in a previous paper (7). It is not probable that they played any considerable part in the morbid process in the present case and, as already stated, were soon outgrown by the other organisms, as they were no longer present when the child had been transferred to the fever hospital.

Though several cases of cancrum oris have been attributed to the symbiosis of Vincent's fusiform bacilli and spirilla, these organisms were by no means predominant in the present case. This may in some measure account for the fact that the local condition though improved did not yield so rapidly to the action of salvarsan as when the process is entirely due to Vincent's organisms (8).

We are much indebted to Dr. Ross, lately house-physician at the Victoria Hospital for Children, for the notes and charts of the case.

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INFECTION OF MIDDLE EAR WITH VINCENT'S ORGANISMS.

By James Adam, M.A., M.D.,
Aural Surgeon, Glasgow Royal Infirmary Dispensary.

Hitherto infection with Vincent's organisms—spirochætes and fusiform bacilli—has been mainly recognised in connection with the upper air passages. Lately these organisms have been found in corneal ulcer (2), but I had not heard of them as affecting the ears when I showed two cases at the meeting of the Scottish Oto-laryngological Society last June. Dr. J. D. Rolleston, however, informs me that R. Johnson Held (3) has reported a case of chronic suppurative otitis media due to these organisms; a radical operation was performed with resulting meningitis and death. Yates (6) has also reported a case.

At the request of the Editor I subjoin my experience of the infection. The first three cases belong to Glasgow and were seen at the Dispensary of Glasgow Royal Infirmary during 1914. For the bacteriological reports I am indebted to the assistant pathologist, Dr. J. A. G. Burton.

(1) On January the 6th a boy, aged 6 years, was brought by his aunt. He had been deserted by his mother so that no history prior to July, 1912, could be obtained. Both ears had been suppurating before that and continuously since. From both ears issued a profuse, foul-smelling, blood-stained discharge; there was erosion of the meatus and adjoining parts of conchæ; the external canals were plugged with angry-looking, bleeding granulations; the parts were very tender. One small gland could be felt behind the left sternomastoid. Swabs from the throat were negative except for one small colony of *Staphylococcus albus*; films from a swab from the ear showed, in profuse growth, fusiform segmented bacilli and spirochætes, also Gram-positive cocci, probably pneumococci. Culture gave a profuse growth of a coliform bacillus. Many remedies were tried, including salvarsan locally, with little effect. The best results were got from painting the eroded surfaces with 5 per cent. silver nitrate in sp. æth. nitr., cleansing, instillation of tr. iodi, and latterly and especially with instillation of ethyl-violet and brilliant-green, each in 0·1 per cent. watery solution. After three months' treatment the granulations cleared up and the discharge ceased. When the tympanum could be inspected it was found that malleus, incus, and

most of the tympanic membrane in both ears, were gone. Hearing for whisper: Right ear, 8 ft.; left ear, 12 ft. The ears remain dry at the date of writing (December the 2nd).

(2) A rachitic child, aged 22 months, was brought on April the 29th with double aural suppuration of ten months' duration, and nasal catarrh of twenty. The clinical and bacteriological findings were a replica of the preceding case; here also pneumococci were found. The glands were enlarged on the left side of neck. On May the 6th no fusiform bacilli were found; a few spirochætes; on May the 22nd pneumococci alone. No Vincent's bacilli were ever got from the naso-pharynx. As the discharge still persisted from the ears the child was admitted into the wards and after eight days' further treatment I resolved to operate, but this was declined and the patient removed. On November the 24th I induced the mother to bring the child again to the Dispensary and found the ears in much the same condition as at first except that there were less granulation and erosion; there was marked fœtor and the Vincent's organisms had returned as verified by Dr. John Teacher, pathologist to the Infirmary. Treatment: The silver solution was applied to the erosions as in the preceding case together with instillation of tr. iodi and of ethyl-violet and brilliant-green solution. This child's twin brother was brought with it to the hospital in April suffering from nasal catarrh and suppuration from the right ear of a year's duration. There was no erosion of meatus, no granulations, no Vincent's organisms and no history of throat affection.

(3) A woman, aged 45 years, came in the beginning of July with a history of pain and discharge from the right ear of ten weeks' duration. The meatus was plugged by a necrotic, bleeding polypus. When this was removed the meatus was still crowded with bleeding granulations. The fœtid discharge gave Vincent's organisms. There was pain in the sterno-mastoid region. Instillation of ethyl-violet and brilliant-green was at once begun. On the 16th she was admitted to the wards as she was still complaining of pain in the sterno-mastoid region. By this date Vincent's organisms could no longer be found, though pneumococci and staphylococci were still plentiful. On the 21st I removed large masses of granulations; there was profuse bleeding. By the 29th the discharge was much less; the swab showed a few *Micrococci catarrhales*; cultures yielded practically nothing. It was thought, however, in view of the history of pain that a mastoid operation would be advisable, but the patient would not submit and left hospital. This woman has left Glasgow, but so far as can be ascertained she has required no further treatment.

(4) Just as I am writing this (December the 2nd) the School Board of Hamilton has sent me a girl, aged 8 years, who has had suppuration of left ear for at least six months. The meatus and canal are swollen and very tender, tending to bleed. Swab gave the characteristic organisms and pseudo-diphtheria bacilli (Dr. Hume Paterson, bacteriologist to Lanark County Council). After cleansing the canal, into which one can look only a short distance owing to the walls being nearly in apposition from swelling, there are seen spots of whitish membrane covering the most inflamed parts of the canal. This membrane reminds one of that seen on the tonsils in Vincent's angina. I had noted the merest suggestion of it in the other cases because in these the whole picture was dominated by the crowding granulations.

The negative features common to these cases are: Absence of much disturbance to the general health, absence of pyrexia, absence of any history of throat infection, absence of the special organisms in swabs from the throat, absence of special infectivity (for in no case was there any history of a similar affection in the same family, even in the case of the twins one of whom had also a suppurating ear).

The positive features in common are: The constant presence of Vincent's organisms, the frequency of the pneumococcus as compared with other bacteria (three times out of four), chronicity, stinking and profuse discharge, masses of profuse and readily bleeding generations in the more pronounced cases, erosion of the external parts of the ear, slight tendency to the formation of membrane, though it is probably always present at some stage but not readily visible owing to the anatomy of the parts and predominance of granulations, erosion of the external parts of the ear, and slight glandular enlargement.

It would be rash to infer from these few cases that this infection of the ear may not be highly dangerous, but in these four cases it has proved to be a local infection, locally virulent yet amenable to appropriate treatment. In a site locally dangerous like the ear any infection may become dangerous; but where there are no urgent symptoms of intra-cranial danger it would seem advisable to postpone serious operative measures till a fair trial had been made of the treatment above indicated. In that the solution of ethyl-violet and brilliant-green holds the chief place; for my knowledge of these I am indebted to Dr. Carl Browning, formerly clinical pathologist to Glasgow Western Infirmary and now of the Middlesex Hospital, and also to his assistant Dr. J. W. Mackie. The ethyl-violet, I believe, they had found specially useful against pneumococcal infections of the eye, which induced me to try it in these Vincent infections. Oddly enough, the pneumococcus survived after the Vincent organisms had disappeared. Possibly it might have succumbed to a stronger solution of the ethyl-violet alone; but I have found the above mentioned combination in very much weaker solution highly irritating to some nasal mucous membranes. Still, it is worth keeping in mind for the typical Vincent's angina which I have had no opportunity of treating with this agent and for which salvarsan, although it failed in these ear cases, has hitherto proved the most potent application.

Probably infection of the ear with Vincent's organisms is more common than has been supposed, else it is not likely that three cases would have turned up at one hospital in six months. The condition for which one is most apt to mistake it, as in the case of the throat, is diphtheria.

At first I was inclined to think that this Vincent infection was primary, but Case 2 in which it disappeared, or seemed to disappear under treatment, and was found four months later to have recurred, suggests that Vincent's infection is a graft on another infection, here mainly pneumococcal. The history of the other cases points to the same conclusion. Indeed, consideration, not only of the clinical history, but of the social environment of these cases impels one to think that Vincent's infection of the middle and external ear is a graft on other affections resulting from gross neglect. One case had been deserted by his mother and had had no attention to his ear for at least two years after its onset; the twin child was neglected because he was a twin and his mother had her hands more than full of numerous other small progeny; the remaining child, although her ear has been discharging for more than six months, would not yet be under treatment but for the School Board; the adult might have been the mother of Dickens' "Fat Boy." Clinicians can hardly help thinking that the constant occurrence together of spirillar and fusiform baccilli in this infection is less likely to be a symbiosis of two entirely different organisms than different life-stage forms of one organism, and G. H. Cocks (1) in a very complete paper on Vincent's angina, says that "recently Ruth Tunnicliffe's studies have apparently proved that the two are different forms of the same organism. The organism is extremely polymorphous and presents many intermediate forms between the typical spirillum and the fusiform bacillus," a remark I can corroborate. Ellerman, Weaver and others (4) claim to have been able to make cultures of the fusiform bacillus. It is probably because these organisms fail to grow on ordinary culture media, though they can be detected readily in smear preparations, that the diagnosis has been frequently missed and the disease in the ear, as formerly in the throat, has been regarded as rarer than it really is. It will be seen that in respect of comparative rarity, of lack of contagion, of slightness of constitutional symptoms, and of favourable prognosis, the condition as affecting the ear resembles that in the throat as described by Dr. Rolleston (5) in this JOURNAL.

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Postscript.—Since writing the above I have had three other cases, all in children, and all showing erosion of the external auditory canal. In addition to Vincent's organisms other bacteria were present.

PERFORATION OF THE ARCH OF THE AORTA BY SAFETY PIN IMPACTED IN THE ŒSOPHAGUS.*

By E. G. L. GOFFE, M.D., B.S.Lond.,
Senior Assistant Medical Officer, North Eastern Fever Hospital, Tottenham.

A FEMALE infant, aged 10 months, was admitted to the North Eastern Hospital, Tottenham, February the 18th, 1912, certified to be suffering from scarlet fever.

History of case.—No previous illness. Sore throat February the 16th. Rash on chest on the 17th.

Condition on admission.—No rash, fauces normal, tongue furred. Temperature 100° F. Pulse 120. Respirations 48.

As the diagnosis of scarlet fever was not confirmed on admission the child was sent to an isolation ward. It was seen late again the

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* A specimen of the case was shown at the Section for the Study of Disease in Children of the Royal Society of Medicine, on December the 11th, 1914.

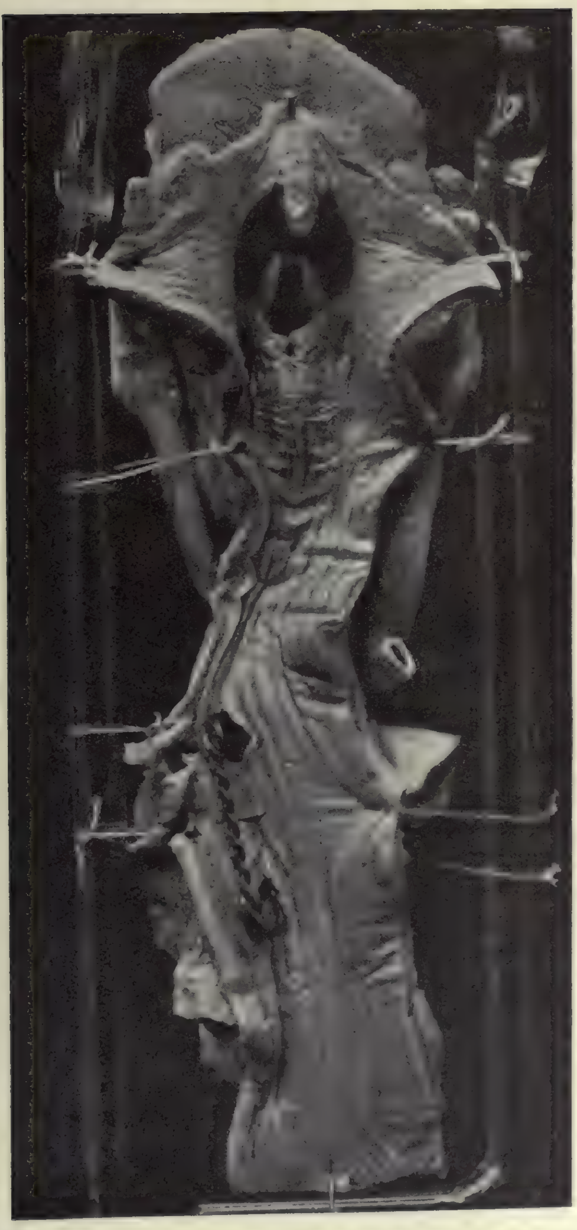

FIG. 1.—Showing pin in œsophagus. The opening made by the pin has been slightly torn in mounting the specimen.

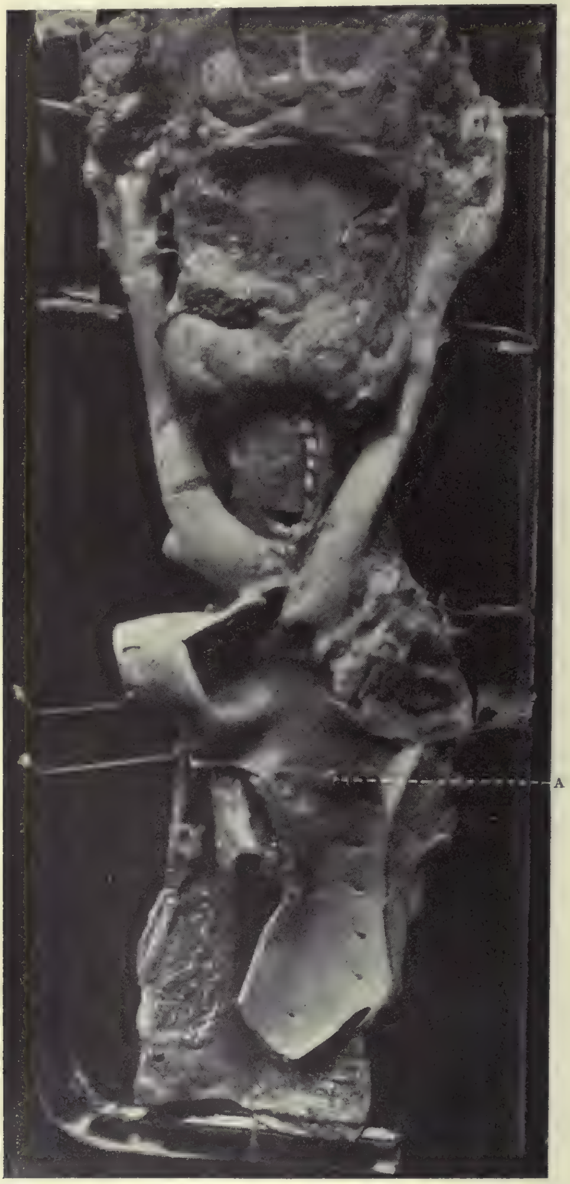

Fig. 2.—Showing opening (a) made by pin point in aorta.

same evening, when the nurse reported that it was fretful and had vomited a little milk after each feed. At 12.30 p.m. the next day, February the 19th, the child vomited after a feed of milk, brought up a quantity of blood and died.

No definite information could be obtained from the parents about the child's illness.

The child had been left almost entirely in the care of a grandmother, who had never missed the safety pin, which was one of a type used to secure the child's napkin.

The condition was not diagnosed ante mortem.

From the investigations made for the purposes of the inquest, I came to the conclusion that the child had probably swallowed the pin about three weeks before death.

In Fig. 1 the œsophagus is shown, opened at the back, with a brass safety-pin *in situ* as found post mortem. The pin, which is 1¼ in. long, is open with the open end downwards. The catch half of the pin is seen in the œsophagus; the other half having passed through the œsophagus with the point downwards and forwards is not seen. The pin portion passes to the left of the trachea on a level with its bifurcation.

The œsophagus is perforated on its anterior surface about 1½ in. from its upper extremity, the pin half, having passed completely through the wall of the œsophagus, is in a cavity which goes from the gullet to the aorta. The cavity is about 1 in. long by ¼ in. across. The walls of the cavity are thickened.

Viewing the specimen from the front (Fig. 2) there will be seen a perforation in the posterior wall of the aorta, with the point of the pin just appearing through the hole (marked A) in the interior of the artery. The aorta is perforated about ½ in. below the origin of the left subclavian artery.

Death was due to hæmorrhage from the aorta owing to ulceration set up in its walls by the presence of the pin in the tissues between the aorta and gullet.

The bleeding was into the œsophagus. The stomach was full of blood which formed one large clot. There was little blood in the upper part of the small intestines. No blood, altered or unaltered, was found in the large intestines. The heart and blood vessels were practically empty. All the tissues were pale and bloodless.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, December the 11*th*, 1914.

The President, MR. T. H. KELLOCK, *in the Chair.*

? Aortic Disease.—Dr. F. J. POYNTON.—The interest of the case lay in the entire absence of any history of heart disease or cause for heart disease except tonsillitis, and in the exact interpretation of the physical signs.

A boy, aged 5 years, was sent to hospital by school medical officer for heart disease. For two years the mother had noticed that the child soon got tired and breathless on exertion. No history of rheumatism in child or parents. No fever. Tonsils very large and almost meeting. Pulse somewhat irregular, 84, and *strikingly small in volume.* Heart: No apparent enlargement, and the impulse not forcible. Apex: First sound short, and systolic murmur. Aortic cartilage: Rasping systolic murmur conducted upward and outward. No thrill over its maximum The murmur, traced towards the apex, got fainter, and then the apical murmur was heard increasing in intensity to the apex. It would seem that these were two different systolic murmurs. The basal murmur could be heard at the pulmonary base, but was fainter there than in the aortic region. The child in other respects did not seem to have any signs of illness.

Nine patches of Morphœa in a Child.—Dr. J. L. BUNCH showed a girl, aged 11 years, who had developed the first lesion a few weeks ago just below the left iliac crest. It had showed itself as a dense yellowish-white, small patch, with no suspicion of redness or coloured border, and had retained these characteristics while spreading to its present size of 2½ in. by 1½ in. The outline was sharp and the skin was distinctly harder than the healthy skin surrounding it. Eight other similar but smaller lesions had since appeared on the chest, back, and shoulders. The face was free. The sweat glands did not appear to function over the area of these lesions. None of the lesions showed any sign of coalescing. The number, distribution, small size, and rapidity of development of the lesions seemed to bring the case within the category of the rare disease morphœa guttata, or white-spot disease. There was no evidence of peripheral neuritis or ganglionic lesion.

Generalised Ichthyosis.—Dr. J. L. BUNCH showed a girl, aged 8 years, in whom the disease had been present since birth. The extensor surfaces were most affected, but the flexor aspects and the face to a less extent were also involved. The epidermis was thickened and pigmented, the surface was covered with a coarse scaliness, and there was pronounced follicular keratosis. The skin was dry, harsh, and rough, wanting in elasticity, and the natural lines of the skin were exaggerated. The dirty-greyish appearance of the skin could not be removed by any external applications.

Subjective symptoms were practically absent.

Case of Myatonia Congenita with Dilatation of Colon.—Dr. G. A. Sutherland showed a male infant, aged 2 years, who had been admitted for an abdominal swelling. Bowels usually constipated; recently motions loose, scanty, offensive. A large swelling occupied the right side of the abdomen and extended into the iliac region on the left side; apparently fæcal. Anal orifice very small and tight. X-rays showed great dilatation of colon. Abdominal mass removed by enemata, etc., and sphincter ani forcibly dilated. Great improvement as regards action of bowels and size of abdomen.

The child could sit up, but could not stand or pull himself into erect posture. He could stand with support. Muscles small and markedly hypotonic. Joints very flaccid. Knee-jerks not elicited. No marked rickets.

He was peculiarly apathetic and placid. He never talked, but babbled a little to himself. ? Mental backwardness.

Hypertrophy of the Gums.—Dr. Robert Hutchison showed a boy, aged 5 years, who had had enlarged gums all his life, which made it impossible for him to shut his mouth properly. The gums were greatly hypertrophied, the teeth being almost buried in them. Pus could be squeezed out from around some of the teeth. The boy seemed otherwise in good health.

Pulsating Tumour of the Scalp.—Mr. Philip Turner showed a girl, aged 18 years, with a pulsating swelling of the scalp, which had appeared shortly after a fall in which she struck her head against a concrete floor nine years ago. She was not unconscious after the fall, and there were no symptoms of concussion and no open wound of the scalp. The tumour had caused no symptoms, but had increased slightly in size. Three or four months ago the skin over the swelling ulcerated and became very septic, but there was no hæmorrhage; after treatment the ulceration soon began to heal. There was now a soft, pulsating swelling occupying the occipital region and extending nearly to the vertex. X-rays showed no opening in the bone, though the surface appeared irregular and grooved.

Cerebral Embolism in Diphtheria.—Dr. J. D. Rolleston.—A girl, aged 8 years, was admitted to hospital on October the 24th with severe faucial and nasal diphtheria on the third day of the disease. Large doses of antitoxin were given, and the throat became clean on October the 28th, but the same day the heart, hitherto normal, showed some dilatation and weakness of the first sound. The voice became nasal on October the 30th.

At 11.15 a.m. on November the 7th she retched, the respirations became rapid, the colour cyanosed, and a convulsive movement of the right arm and loss of consciousness ensued. Double ankle clonus and double extensor response were obtained. Both abdominal reflexes were lost, but the corneal reflex, though absent on the right, was active on the left side. A cardiogram showed premature ventricular contractions. Pulse, 115. On November the 8th the pulse was 160 and during short paroxysms rose to 240.

A specimen showed embolism of the basilar artery, of the superior cerebellar arteries, and to a greater or less extent of all the arteries entering into the formation of the circle of Willis—viz., the posterior cerebral, posterior communicating, internal carotid, anterior cerebral, and middle cerebral arteries. The lesions were much more marked on the right than on the left side. An ante-mortem clot was found in the left ventricle and a small infarct in the left kidney.

Pericarditis in Scarlet Fever.—Dr. E. B. Gunson.—A girl, aged 15 years, was admitted to hospital with scarlet fever, on the thirtieth day of disease. She had formerly had measles, chickenpox, and whooping-cough. She had never had rheumatic fever, but had had occasional "growing pains." On admission the temperature was subnormal. The patient was pale. The pulse was regular, with a rate of about 100 per minute. The heart was not enlarged. In the mitral area there was a short, sharp first sound, followed by a loud, rough systolic murmur, conducted to the axilla. Endocarditis was diagnosed, and the patient was kept in bed. The temperature remained subnormal until the thirty-fifth day, when it rose to 101° F. Slight pyrexia persisted. On the thirty-eighth day the pulse became irregular, owing to each alternate beat being due to a premature contraction. The arrhythmia persisted for two days only. On the fortieth day pericarditis developed, accompanied by arthritis. Death occurred on the forty-fourth day.

Post mortem, the parietal and visceral layers of pericardium were completely but loosely adherent by recent fibrinous exudate. When the layers were separated and the exudate was detached, numerous small subepicardial hæmorrhages were disclosed. The heart-muscle was pale. The cusps of the mitral and tricuspid valves were thickened and there were some recent vegetations on the mitral valve. The left auricle presented a patch of mural endocarditis. There were a few small patches of atheroma at the commencement of the aorta.

Microscopically the left auricle showed thickening of the endocardium, with areas of commencing necrosis, myocarditis, and organising pericardial exudate containing a number of irregularly dilated capillaries. The right auricular muscle presented a similar appearance; the endocardium was healthy. The left ventricle showed acute myocarditis of mild degree.

Perforation of the Arch of the Aorta by Safety Pin impacted in the Œsophagus.—Dr. E. L. Goffe (*vide* p. 44).

Pericarditis from a case of Scarlet Fever.—Dr. E. G. L. Goffe.—A girl, aged 9 years, was admitted to hospital on October the 9th, 1914, suffering from scarlet fever. There was a previous history of rheumatism. Condition on admission: Well marked punctiform erythema of trunk and limbs, fauces enlarged, cervical adenitis. Choreiform movements of face, right arm and leg. Temperature 102° F.

October the 26th: Double pericardial rub at base, presystolic and systolic apical bruit. Increased area of cardiac dulness. October the 31st, dulness increased. Choreiform movements marked.

November the 1st: Epistaxis, and difficulty in swallowing; 5 p.m., cyanosis, rapid breathing, restlessness. November the 2nd, 1.50 a.m., death.

A specimen showed the parietal and visceral layers of the pericardium completely covered with recent lymph, small recent vegetations on the mitral and aortic valves, and some hypertrophy of the myocardium. The other organs seemed normal.

Case of Liver Abscess in an infant, aged 5 weeks.—Dr. Eric Pritchard and Dr. E. Violet Turner.—The abscess was situated in the right lobe. No other source of suppuration was found. Pus from the abscess grew *B. coli* and a Gram-negative diplococcus. *B. coli* was also grown from the blood.

Abstracts from Current Literature.

Medicine.

A twin monstrosity of the third week of embryonic life (*'St. Petersburg. Med. Zeit.,'* 1914, XXXIX, *p.* 114).—**Ottow,** after some general observations on the rarity of these twin monstrosities, states that only three have been recorded between the fourth and sixth weeks of fœtal life. He describes one which could be certainly said to belong to the third week; it was found in an operation for a tubal pregnancy. The two individuals were united in the thoracic region and the yolk sac; they had grown unequally. A full description of the case is to be found in Volkmann's *'Samm. klin. Vortr.,'* 1914. M. D. EDER.

What is the cause of "physiological loss of weight of newly-born children"? (*'Jahrb. f. Kinderheilk.,'* 1914, LXXX, *p.* 21).—**G. Berestad** finds that the physiological decrease of weight of the newly-born is to be ascribed to an insufficiency of the whole process of metabolism, especially hydrogen metabolism. A failure of the gastro-intestinal function plays the greatest part in this insufficiency. The duration and extent of the loss of weight are dependent on the degree of development of the child, his initial weight, and the quantity of mother's milk. Artificial feeding increases and prolongs the decrease of weight. F. R. B. ATKINSON.

On the cause of death of children during labour (*'Wien. klin. Rund.,'* 1914, XXVIII, *p.* 239).—**Goldmann** reviews the causes of death of children during labour at the Heidelberg clinic from November, 1902, to May, 1911. Out of 4070 births there were 228 stillbirths; in 83 of these the heart was not heard at the beginning of labour. This leaves 142 who died during labour. As universally found, the mortality was greater among boys than girls—83 to 59. The causes of death were: Difficulties of the soft parts, 11; contracted pelvis, 31; placenta prævia, 24; premature rupture of the placenta, 3; eclampsia, 11; abnormal position, 20; prolapse of the cord, 4; strangulation by the cord, 5; syphilis, 9; maceration without lues, 7; premature birth, 4; monstrosities, 3; in caul, 2; cause unknown, 4; toxins, 1. M. D. EDER.

Laminar desquamation of the skin in the newborn (*'Semana Med.,'* 1914, XXI, *p.* 373).—**D'Ovidio** describes an infant three days old whose general condition was good, but in whom the skin was peeling in flakes. The skin had peeled from the scalp to the feet, the only normal part being the soles of the feet. The palms of the hands, the face, eyelids, etc., were denuded of skin. Beneath the epidermis the tissue was dry. In less than a month the skin had returned to a normal state. The condition corresponds with a skin-affection described as "fœtal ichthyosis" and is to be distinguished from that rare skin disease, dermatitis exfoliativa. D'Ovidio believes that the desquamation in his case had begun in the last days of fœtal life. The treatment consisted in a daily bath and the application of finely powdered talc. M. D. EDER.

Pemphigoid of the newborn (pemphigus neonatorum) (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, *p.* 1159).—**H. N. Cole** and **H. O. Ruh**

report an epidemic of nine cases of "infantile pemphigoid (pemphigus neonatorum)." A pure culture of the *Staphylococcus aureus* was isolated in all cases in which unbroken vesicles were to be found. In one case the termination was fatal, and a coccus was found in the internal organs at necropsy. The epidemic was started from a case of typical pemphigoid of the newborn, which later changed into a clinical picture of dermatitis exfoliativa neonatorum (Ritter), and as the ætiological agent in the two diseases is the same, no distinction should be drawn between them. Impetigo contagiosa seu vulgaris seu bullosa (streptogenes) should be sharply differentiated from infantile pemphigoid because of its different bacteriological origin. The authors think that infantile pemphigoid should be placed among the reportable diseases because of its severe epidemic characteristics and high mortality (from 25 to 50 per cent.), and that on account of the striking results obtained in this epidemic an autogenous vaccine should be used in all cases of the disease. T. R. WHIPHAM.

Lumbar puncture in the newborn (*'Thèses de Paris,'* 1913–14, *No.* 398).—**E. Trouvellier.**—This can be performed with a Pravaz syringe or a special cannula and trocar devised by Devraigne. The operation is suitable both for diagnostic and therapeutical purposes, and should be performed whenever the infant is apparently dead or when convulsions or asphyxia are present. Not only is the existence of meningeal hæmorrhage revealed, but recovery is often effected by lumbar puncture. J. D. ROLLESTON.

Atrophy of infants and congenital lesions of the liver of the newly-born (*'Arch. de Méd. des Enf.,'* 1914, XVII, *p.* 399).—**H. Barbier** and **M. Cléret** find that heredity dominates the history of atrophy, as the majority of infants suffering from atrophy are descended from parents suffering from syphilis, tuberculosis, or alcoholism. The liver in some of these cases shows thickening of Glisson's capsule and is of a dark colour. The parenchyma is hard; in others the liver is pale, and shows some degenerated zones. The authors describe illustrative cases.

F. R. B. ATKINSON.

Case of mucous plug in the rectum in a newborn infant (*'Riv. di Clin. Pediat.,'* 1914, XII, *p.* 401).—**A. Lorenzini** relates the case of a child who fell into a condition of apnœa soon after birth by vertex presentation. He had passed no meconium in spite of an oil and water enema. After a second enema a cord of gelatinous appearance was seen at the anal orifice which after traction by the nurse was found to be in continuation with an elongated fusiform mass. Its expulsion was followed by a certain amount of fluid meconium. The mass on examination was about 10 cm. long and 2 cm. thick at the middle, the extremities being $\frac{1}{2}$ and 1 cm. The surface was moist with transverse ridges, of a dirty white colour and greenish in parts. Microscopically it consisted of a cortical layer from the inner aspect of which arose intersecting trabeculæ converging to the centre and enclosing spaces filled with a substance allied to mucin. It seemed to be a mucous product analogous to that observed in the muco-membranous entero-colitis of adults but having altered cellular elements, probably of an epithelial nature. The author gives a bibliography bearing on these cases and woodcuts of the macro- and microscopical appearances.

VINCENT DICKINSON.

Umbilical infections ('*Med. Record,*' 1914, LXXXVI, *p.* 715).—**R. L. Vioran**.—These may occur in two ways: (1) through the umbilical wound after separation of the cord, (2) through the cord. The infections of wound and cord are due to saprophytic bacteria and may remain local, leaving a wound with exuberant granulations. The most frequent bacteria causing umbilical infections are the streptococcus, the *Bacillus coli* and the *Bacillus pyocyaneus*. The infection may be superficial or deep, forming the umbilical fungus, ulcer, pyorrhœa, omphalitis and periomphalitis leading to peritonitis and general septicæmia. The treatment for these conditions is the same as for infections elsewhere. In cases of umbilical erysipelas anti-streptococcic serum should be used. Erysipelas phylacogen is worthy of a trial. Ichthyol, with petrolatum as a base (20 to 40 per cent.), is of value as a dressing, frequently changed. Antitetanic serum is very efficacious in cases of tetanus of the newborn. The initial dose should be 1500 units and be repeated every twenty-four to thirty-six hours according to circumstances, together with hypnotics. F. R. B. ATKINSON.

Hæmorrhage in the newborn ('*Austral. Med. Journ.,*' 1913, II, *p.* 1357).—**A. G. McGowan** describes three cases, two of which died rapidly and one recovered. The death-rate, as a rule, is 50 to 60 per cent. No treatment did the first cases any good. In the third case normal horse-serum was given by the mouth with small doses of calomel; 10 c.c. of serum was given every day, and altogether about 40 c.c. was given.

F. R. B. ATKINSON.

Intra-cranial hæmorrhage in the newborn ('*Boston Med. and Surg. Journ.,*' 1914, CLXX, *p.* 682).—**R. M. Green.**—This may be due to the trauma of labour or may be associated with the hæmorrhagic disease of the newborn. Symptoms rarely appear before the second day and sometimes not till the fourth or fifth. The earliest are refusal to take the breast, pallor, and slight facial œdema. Typical signs of increased intra-cranial pressure may be absent. The diagnosis may be confirmed and relief afforded by lumbar puncture, if the hæmorrhage is infra-tentorial, or by puncture through a fontanelle or suture if the hæmorrhage is over the cerebral convexity. If these measures fail, decompression by craniotomy is indicated. Most intra-cranial hæmorrhages in the newborn are subdural, but intra-ventricular hæmorrhages may also occur. The bleeding may arise from laceration of the tentorium, the choroid plexus, longitudinal sinus, or pial vessels. Seven illustrative cases are recorded. J. D. ROLLESTON.

Melæna neonatorum ('*Der Kinderarzt,*' 1914, XXV, *p.* 145).—**C. Stamm** records five cases, four of whom were males. In four birth was normal and one was a forceps case. The melæna began on the first, second, third (two cases), and fourth days respectively. Hæmatemesis occurred in only one case. The forceps case died on the third day following birth, after an enormous intestinal hæmorrhage on the second day. The other four cases recovered. The melæna lasted usually two to three days. The necropsy of the fatal case showed anæmia of all the organs, subpleural and subdural ecchymoses, and an ulcer ·5 cm. long in the mucosa, 1 cm. below the pylorus. All these cases were treated with gelatin by mouth in rectal injections and subcutaneously. J. D. ROLLESTON.

Further blood-findings in melæna neonatorum ('*Jahrb. f. Kinderheilk.,*' 1914, LXXIX, *p.* 708).—**E. Lövegren** refers to his previous paper (*vide* British Journal of Children's Diseases, 1914, xi, *p*. 126) and records two more cases. In the first the melæna began on the second day of life and was very severe. After an injection of 10 c.c. of gelatin the hæmorrhage at once ceased and rapid recovery resulted. The coagulation time during the bleeding was prolonged (two to three minutes). The red corpuscles showed no disposition to rouleaux formation and exhibited certain morphological changes, viz., early appearance of prickle cells and difference in size. When the melæna ceased these changes all disappeared. In the second case the melæna began at the end of the third day, was not severe, and ceased without treatment. The red cells were normal in size, showed good rouleaux formation, and no prickle forms, and the coagulation time was one minute. J. D. Rolleston.

Surgery.

A congenital malformation of the neck (*'Journ. Amer. Med. Assoc.,'* 1914, lxii, *p*. 451).—**C. A. Parker** reports the case of a girl, aged about 11 years, who had a peculiar deformity involving principally the skin on both sides of the neck. The deformity consisted of two symmetrical wing-like folds of skin extending from either mastoid region to the top of the shoulder. These wings had always existed to some extent and changed very little in appearance with muscular contraction. They interfered somewhat with the movements of the head, but it was more on account of the deformity that their removal was sought. The redundant fold of the skin was removed by an incision extending from the mastoid to the outer end of the clavicle on either side of the fold, leaving an elliptical wound, which, when closed, made a more nearly normal-appearing neck. On account of troublesome anæsthesia the two folds were removed at separate operations. The portion removed, beside the skin, contained fibrous tissue, in which were included some muscle fibres. No microscopic examination was made. The position of the fold, just behind the ear, was too far forward for the trapezius, and the bottom was too far out on the shoulder for the sterno-mastoid. An older sister had a congenital dislocation of the hip, and the patient herself later developed a dislocation of the patella, resembling the congenital type, which was cured by operation. T. R. Whipham.

Hygroma cysticum colli and hygroma axillare (*'Journ. Amer. Med. Assoc.,'* 1914, lxii, *p*. 522.)—**O. C. Smith** reports three cases. The first was a boy, aged 12 years, who for 2½ years had had a swelling in the left cervical region which enlarged rapidly after a blow by a snow-ball. The tumour was cystic in character and extended from the lobe of the ear nearly to the clavicle. The lymphatic glands were not enlarged. At the operation the cyst, which was found to be intimately connected with the parotid gland, was removed intact. It contained a clear watery fluid and the histological report was as follows: "The membrane lining the cyst is composed of flattened endothelial cells arranged in a single layer. The wall outside is made up of fibrous tissue and fat. In the fibrous tissue are numerous capillary blood-vessels and lymph spaces, the latter varying much in size, some being large enough to merit the name of small cysts. Scattered also in the fibrous tissue are numerous small areas of lymphoid cells. Surrounding the main cyst cavity in a narrow zone are small bundles of fibres morphologically like smooth muscle cells." The boy made a good recovery and there has been no recurrence. The second case was a man, aged 20 years, who for ten months had had a soft immovable tumour in the left axilla measuring 15 cm. in length and 8 cm. in breadth. It proved to be a thin-walled multilocular cyst and was easily dissected out. A hæmatoma somewhat delayed recovery; no recurrence. Case 3: A girl, aged 14 days, was delivered instrumentally and at birth was found to have a swelling of the size of a walnut in the left axilla. The mass grew rapidly to the size of an orange and was slightly movable on the chest wall. The lymphatic glands were not enlarged, but the arm was œdematous. This also was a thin-walled multilocular cyst and was attached to the skin. It was removed intact and the microscopical report was as follows: "Section shows many cysts of various sizes in supporting structure of connective tissue. The connective tissue is very vascular, with a few small areas of extravasated blood and clumps of fat-cells. The cyst walls in places are lined by a thin layer of endothelial cells. In most places this is lacking." Good recovery.

T. R. Whipham.

Cystic hygroma ('*Practitioner,*' 1914, xciii, *p.* 286).—**L. C. Panting** describes this case in a child, aged 8 months. The tumour extended from the mid-line of the neck in front to the mid-line behind on the left side, and from the lower jaw and the mastoid process above to the clavicle and on to the scapula behind. The tumour was removed in two stages with complete success.

F. R. B. Atkinson.

Hygroma of the groin ('*Journ. Amer. Med. Assoc.,*' 1914, lxiii, *p.* 1853). —**P. W. Roberts** reports the case of a boy, aged 16 years, who was sent with a diagnosis of a psoas abscess, to which clinical appearances pointed. There was present at the upper and anterior aspect of the right thigh a large tumour extending from the groin half way to the knee, with the characteristic feel of a tense abscess. On the outer side of the thigh there was a discharging sinus through which a probe could be passed to a point over the head of the femur. Examinations of the hip-joint and spine were, however, negative, as were also röntgenograms of these parts. Nevertheless, the clinical picture was one of cold abscess. The swelling had enlarged rapidly, having developed in three months without pain or temperature, and there was no history of injury or infection. The patient was taken to hospital, and incision of the tumour resulted in the evacuation of about a quart of a clear, straw-coloured fluid which contained no pathogenic organisms. Exploration revealed a multilocular cavity extending to the ramus of the ischium without definite source of origin, the bone not being involved. There was no connection with the sinus on the outer side of the thigh. The cavity was lined with an extremely delicate membrane, but there was apparently no limiting membrane of a fibrous nature, the resistance of the muscles and fascia acting as a retaining wall. The cavity was thoroughly scraped and allowed to drain. A few days later a constriction half way toward the ischium closed and the upper end of the cyst rapidly refilled, necessitating a second opening, which was followed by scraping and the application of iodine. The sinus on the outer side of the thigh, which was probably the remains of a ruptured cyst, was also thoroughly scraped. Both cavities were treated with iodine, phenol, bismuth and argyrol, over a period of fourteen weeks without any attempt at healing from the bottom, although both contracted in circumference. There was still a free secretion of clear fluid. In view of the effect of the Röntgen ray on old tuberculous sinuses, the patient was given a four-minute exposure with a hard tube. At the end of ten days both sinuses had begun to fill in at the bottom. Three other similar exposures at intervals of ten days completed the cure. The laboratory report on the scrapings removed from the cavity was not conclusive, owing, no doubt, to the fact that the specimen was taken at the second operation and did not include enough of the lining membrane to determine its exact nature. It would seem, however, that from the delicacy of the lining membrane, the multilocular character of the cyst, and the rapidity and force of its growth, the case should properly be classified under the head of hygroma.

T. R. Whipham.

Atresia recto-vesicalis (*'Cleveland Med. Journ.,'* 1914, xiii, *p.* 414).—**F. C. Henick** records a successful cure in a child, aged 5 months. Absence of the anus and the passage of fæces *per urethram* was noted 24 hours after birth. Littré's operation of left inguinal colostomy was performed and the child progressed satisfactorily, but the opening closed. The author's operation consisted of an incision made in the anal region. The finger, when introduced into this incision, passed directly into the bladder and when sharply bent and directed backwards into the rectum. The connection between bladder and rectum was then separated, the rectal wall turned in by chromic gut stitches and its lower end separated all round and brought down and stitched to the skin. The levator ani muscles were united in front of the rectum, and within ten days the excreta were passed through the proper channels. The author recommends operation within the first forty-eight hours of life. If the above operation fails Littré's colostomy should be performed.

Christopher Rolleston.

Ectopia of the bladder (*'Practitioner,'* 1914, xcii, *p.* 501.)—**A. Edmunds** describes a case in a girl, aged 12 years, and as a result of his experience finds that plastic operations merely for reconstruction of the bladder are unsatisfactory and that transplantation of the ureters is preferable. Transplantation of the base of the bladder is better than separate transplantation of the ureters; the operation is better done intraperitoneally than extra-peritoneally. As most cases die of pelvic cellulitis, the wound should be left open.

F. R. B. Atkinson.

A congenital spermatic cyst (*'Semana Med.,'* 1914, xxi, *p.* 297).—**Rivarola,** in puncturing a swelling of the scrotum which he regarded as a hydrocele, found that the fluid was milky white with every appearance of a chylous fluid. The liquid coagulated slowly, but contained much fat and fibrin. There were few cells—lymphocytes and polynuclears—and no organisms. As the fluid returned radical cure was carried out. In the resected tissue the presence of a piece of epididymis could be made out. In the absence of any evidence of filaria the diagnosis of a congenital spermatic cyst seemed to agree best with the facts. The literature was searched in vain for any previous record of this kind.

M. D. Eder.

A case of lymph cyst of the mesentery (*'Boston Med. and Surg. Journ.,'* 1914, clxx, *p.* 536).—**C. S. Mixter** records a case in a girl, aged 4½ years. The only symptom present was pressure upward upon the diaphragm. The small intestine had been transposed, the cæcum being pulled to the left side. Four quarts of fluid were removed from the cyst.

F. R. B. Atkinson.

A case of lympho-sarcoma with bacterial findings (*'Post Graduate,'* 1914, xxix, *p.* 500.)—**R. H. Bennett.**—The patient, a boy, aged 5½ years, had suffered from diphtheria four months previously; three months before, swelling of the left side of the neck occurred. A general glandular enlargement followed the attack of diphtheria. Two glands removed showed the presence of a diphtheroid bacillus. F. R. B. Atkinson.

Treatment.

Treatment of hæmorrhagic disease of the newborn by direct transfusion of blood ('*Journ. Amer. Med. Assoc.*,' 1914, LXII, *p.* 1866).—**V. D. Lespinasse** states that the chief causes of this condition are syphilis, infection, hypoplasia of the coagulating elements of the blood, and asphyxia. External factors, such as parity, the fœtal presentation, duration of labour, complications of labour, obstetric operations, and chloroform, are of minor importance. Syphilis, according to Holt, is a causative factor in from 2 to 6 per cent. of the cases, contrary to a generally current idea that syphilis is always the cause. The pathology of the condition is obscure, no lesions, as a rule, being found except hæmorrhages, though signs of syphilis, inflammation of the umbilical and portal veins, and acute fatty degenerations may be present. To check the hæmorrhage, replace the loss of blood, and overcome the infection, direct transfusion should be practised. The writer records a series of fifteen cases in which there were no deaths from hæmorrhage. Two patients died from syphilis five and nine days respectively after transfusion. Direct transfusion was made from the radial artery or a forearm vein into the femoral or jugular vein of the child for a period of from five to fifteen minutes. The rapidity of the flow should be regulated, as if the blood is allowed to enter the vascular system of the baby too rapidly there will be a temporary dilatation of the heart and the child will become cyanosed. When this occurs the blood-flow should be stopped until the red colour returns. T. R. Whipham.

Transfusion in the treatment of hæmorrhagic disease of the newborn ('*Bost. Med. and Surg. Journ.*,' 1914, CLXXI, *p.* 715).—**R. M. Green** records five successful cases in which the infants' external jugular vein was used. By this method the mortality has been reduced from 50 per cent. to 10 per cent., and a still further reduction may be expected from its more prompt and universal application (*vide* British Journal of Children's Diseases, 1913, x, *p.* 228). J. D. Rolleston.

Purpura hæmorrhagica treated by blood-transfusion ('*Post-Graduate*,' 1914, XXIX, *p.* 499).—**E. W. Peterson.**—Between 250 and 300 c.c. of blood were administered to a boy, aged 2½ years, and the tendency to bleeding ended abruptly and did not recur. F. R. B. Atkinson.

Anti-gonococcal vaccine in ophthalmia neonatorum and infection of adults ('*Policlínica*,' 1914, II, *p.* 1042).—**V. D. Roch** records eight cases of gonococcal ophthalmia treated by anti-gonococcal vaccine (Burroughs and Wellcome), four of which occurred in infants aged from eight to thirty days, and the rest in adults. The infants received two to three injections, the doses ranging from 5 to 15 million gonococci. The results in every case were favourable. In only one case was the sight of one eye completely lost; in ten of the eyes the lesions healed completely, and in the remaining four a slight nebula was left. J. D. Rolleston.

Vaccine treatment in pertussis (*'Arch. of Ped.,'* 1914, xxxi, *p.* 586).—**D. M. Hartshorn** and **H. N. Moeller** review the literature and record their results in eighteen cases treated with a commercial vaccine made from a pure culture of the Bordet-Gengou bacillus. All but six, who showed no improvement, responded favourably to treatment. The authors recommend that in older children the initial dose should be at least 50 millions, which should be doubled at intervals of five days until a dose of 400 millions is reached. Cases which show no improvement should not receive more than four doses. J. D. Rolleston.

Vaccines in the prophylaxis and treatment of pertussis (*'Journ. Amer. Med. Assoc.,'* 1914, lxiii, *p.* 1007).—**A. F. Hess** reports the results of vaccine injections during an epidemic of whooping-cough in an infant asylum. Four different vaccines were used: (1) From a typical strain of the Bordet-Gengou bacillus and two atypical strains. (2) "Bacterin" (Parke, Davis & Co.), which is stated to be composed of a pure culture of the bacillus of pertussis. (3) From four typical cultures of the Bordet-Gengou bacillus isolated in the asylum laboratory. (4) An autogenous vaccine composed of three typical strains isolated from cases included in the epidemic. The results showed none was of value in curing or tempering the disease. Failure was not due to tardy inoculations, as many of the severest cases received not only early active treatment but also prophylactic vaccination. As a prophylactic measure vaccines offer greater promise, though the protective value cannot be compared with that of typhoid vaccine, as twenty out of 244 cases developed pertussis in spite of prophylactic inoculations. However, the proportion of unvaccinated children who developed pertussis so greatly exceeded the number of the vaccinated that the author concludes that the vaccine has protective value in a certain percentage of cases, and should be employed to prevent the spread of infection.

T. R. Whipham.

Treatment of pertussis (*'Arch. of Ped.,'* 1914, xxxi, *p.* 578).—**E. E. Graham** emphasises the following points: (1) Abundance of fresh air. The windows should be kept open day and night if the child is sufficiently ill to be kept in bed. If not in bed as much time as possible should be spent in the open air. (2) Careful attention to feeding and digestion. The feeds should be small and frequent; if vomiting occurs soon after food another feed should be given. Gastro-intestinal disease should receive early treatment. (3) Local applications to naso-pharynx. These are only useful in the early stages, when the infection is localised in the upper air-passages, and consist of applications of 2 per cent. silver nitrate to the naso-pharynx. The spread of infection to the deeper air-passages is thereby prevented. (4) Inhalations. Creosote and carbolic acid are generally employed. They act as a sedative to the mucous membrane and as a local antiseptic. (5) Drug treatment of the paroxysms. Belladonna should be given in drop doses of the tincture, *t.d.s.*, and the daily quantity increased by one or two drops till mild physiological effects of the drug are produced, when the doses must be continued cautiously. Antipyrin in doses of 2 or 3 gr. may be given morning and evening. Sodium bromide gr. v three to four times a day for a child of three years is often beneficial, and codeine, trional, heroin and chloral often allay cough and produce sleep when given either in single doses at bed-time or two or three times a day. Quinine lactate and hydroquinine intravenously or intramuscularly have given good results. Adrenalin in three minim doses of the 1 in 1000 solution every four hours is said to arrest the number and severity of the paroxysms. (6) Suggestion. This may be a considerable adjuvant especially in neurotic children. (7) Vaccine treatment. This is unnecessary in mild cases, but is beneficial in some cases for children of all ages. J. D. Rolleston.

The use of vaccines in the treatment of chronic diphtheria carriers ('*Laryngoscope*,' 1914, xxiv, *p.* 804).—**A. I. Weil** treated twenty-four children aged from five to fifteen years, three of whom had suppurative otitis media containing the bacilli, beginning with a stock vaccine and continuing in the unsuccessful cases with a mixed vaccine obtained from the remaining positive cases which showed the greatest number of bacilli. The initial dose of the stock vaccine ranged from 20 to 40 millions and was increased every three or four days until a maximum of 400 millions was reached. Six doses were given to each patient. The initial dose of the mixed vaccine was 300 millions, which was rapidly increased to 1400 millions, five doses in all being used. These large doses did not cause a rise of temperature or any other sign of general reaction and were more efficacious than small doses. The result of the treatment was that the number of bacilli was markedly diminished, even when they did not entirely disappear.

J. D. Rolleston.

Treatment for diphtheria carriers ('*Med. Record*,' 1914, lxxxvi, *p.* 158).—**H. R. Miller** recommends spraying the throat with a solution varying in strength from ¼ to 1 per cent. of the usual 40 per cent. formaldehyde solution one hour before or at least two hours after food. The spray should be used every three or four hours except during sleep. From three to six days' treatment may be required. Miller records six cases, two of which occurred in adults and four in children aged from twenty-two months to twelve years. J. D. Rolleston.

Effect of lactic acid bacilli on diphtheria ('*Journ. Amer. Med. Assoc.*,' 1914, lxii, *p.* 510).—**S. T. Nicholson** and **J. F. Hogan** report favourably on the treatment of diphtheritic throats with lactic acid bacilli (Bulgarian type). In four cases the nose and throat were sprayed with a culture of the organism, and in five ordinary sour milk was used as a gargle for the throat and spray for the nose. The results were sufficiently encouraging to warrant a further trial of the treatment.

T. R. Whipham.

The use of living lactic acid bacilli in diphtheritic throats ('*Journ. Amer. Med. Assoc.*,' 1914, lxii, *p.* 1779).—**E. V. Goltz** and **W. D. Brodie**, as the result of a further investigation, report that in cases in which the lactic acid bacilli were used there was no appreciable difference in the average time of quarantine from those in which the throats were treated in the ordinary manner with mild antiseptic gargles and various local applications. In the former, both Mulford's (Bulgarian type) cultures of living bacilli and naturally soured milk were used as a spray and as a gargle and nasal douche respectively. In the author's experience lactic acid bacilli hasten the disappearance of diphtheritic membrane, but do not destroy the bacillus.

T. R. Whipham.

The use of blood-serum of immunes in treatment of malignant scarlatina ('*Arch. of Ped.*,' 1914, xxxi, *p.* 599).—**D. S. Barker** records four cases in children, aged from 16 months to 5 years. Four injections of from 1½ to 6 drachms of serum taken from persons who had recently had scarlet fever were given. Three recovered, and one died without showing any benefit from the treatment. J. D. Rolleston.

The treatment of nephritis with adrenalin solution (‘*Riv. di Clin. Pediat.*,’ 1914, xii, *p.* 425).—**N. Fedele** in a communication to the eighth Pediatric Congress at Bologna in 1913 related four cases of nephritis in children, aged from four to nine years, with œdema and albuminuria who made a rapid recovery after the administration of twenty-five drops daily of the ordinary solution of hydrochlorate of adrenalin. He considers it an efficacious remedy whatever be the nature and form of the nephritis, as it does not cause any untoward effects and is applicable to persons of any age. Its activity is explained by the restitution of the deficit of adrenalin due to functional insufficiency of the organ. Vincent Dickinson.

Combined adrenalin and pituitrin treatment (‘*Münch. med. Woch.*,’ 1914, lxi, *p.* 1336).—**P. Rohmer** recommends the combination of pituitrin with adrenalin in the treatment of severe circulatory disturbance in acute infections such as pneumonia, diphtheria, or typhoid fever in children. Young children received injections of 0·25 cm. of 1 in 1000 pituitary extract combined with 0·5 cm. of 1 in 1000 adrenalin solution. Older children received double the dose without ill effects. The injections were usually given six hourly. The various suprarenal and pituitary extracts on the market were of equal value. J. D. Rolleston.

The out-patient treatment of rheumatic endocarditis (‘*Amer. Journ. Dis. Child.*,’ 1914, vii, *p.* 41).—**W. P. Lucas** and **M. H. Wentworth** write a thoughtful paper on this subject, in which they emphasize particularly the value of a “follow up worker,” who visits the home to instruct the parents on the great importance of rest to the cardiac invalid. Their study of the subject, they admit, has awakened them to the very large number of children with cardiac affection, and the need for some systematic method of tackling the rheumatic problem. The figures published seem to suggest that rheumatic heart disease is much more common in America than a perusal of American text-books had led one to expect. Reginald Miller.

Treatment of vomiting infants and of marasmus by high doses of sugar (‘*Arch. de Méd. des Enf.*,’ 1914, xvii, *p.* 321).—**P. Nobécourt** controls the vomiting of infants by the addition of 10 per cent. ordinary sugar lactose or saccharose. This has a sedative action and evokes a considerable liquid secretion in the stomach which may diminish activity and consequently decrease any erosive action. Cachectic infants lose flesh rapidly, and therefore the loss of heat becomes greater. The consumption of albumin rises, and urea accumulates in the fluids of the body. An easily digested and assimilated food is therefore necessary. Fat and albumin are difficult to digest, while sugar is easily digested, and furnishes 4 calories to each gram ingested. Christopher Rolleston.

Sea-water (Quinton’s plasma) by ingestion in acute gastro-enteritis of the newly-born (‘*Le Nourisson*,’ 1914, ii, *p.* 145).—**H. Triboulet** and **H. Godlewski.**—This method of employing Quinton’s plasma is specially indicated in vomiting. Diplase, the plasma of Quinton concentrated with nearly double isotonic plasma, is diluted with two-thirds to three-quarters of sugared boiled water, and given in 50–200 grm. at a time; if the diarrhœa be profuse this dose is given two or three times a day. Milk should be forbidden. If the first dose be vomited the stomach should be washed out and the dose repeated. The authors have had good results from this method. F. R. B. ATKINSON.

The uses of petroleum in the treatment of constipation and other diseases in infants (*'Clin. Journ.,'* 1914, XLIII, *p.* 439).—**E. Pritchard** was the first, he believes, to call attention to this remedy in constipation. His formula, used at the Marylebone General Dispensary, is: Paraffini liq. (B.P.) 33·0, acid benzoici, glusidi āā 0·05, olei cinnamomi, 0·10, decoctum chondri crispi, ad 100·00. It must be made in large quantities and be of good quality, and is expensive. Dose: ʒij after or with each feed, but ℥ss. six or eight times a day may be given with safety. F. R. B. ATKINSON.

Some cases of diarrhœa treated with culture of the Bacillus Bulgaricus (*'Arch. of Ped.,'* 1914, XXXI, *p.* 525).—**C. W. Berry** used tablets of the above bacillus, one four times a day or more according to the severity of the disease, and found that cases of summer diarrhœa, especially when due to putrefactive fermentation, were greatly assisted by their use. The quickest result was obtained by a proper balance of food and an initial dose of castor oil, together with the bacilli. F. R. B. ATKINSON.

Hypertrophy of the thymus and the Röntgen rays (*'Monatsschr. f. Kinderheilk.,'* 1914, XIII, *p.* 69).—**W. Kaupe** believes that in cases of congenital stridor due to enlarged thymus the Röntgen rays should not be employed for the purposes of treatment. F. R. B. ATKINSON.

Reviews.

PRACTICAL PEDIATRICS. By J. H. MCKEE, M.D., Professor of Pediatrics, Temple University, formerly Professor of Pediatrics in the Women's Medical College of Philadelphia, etc., and W. H. WELLS, Assistant Professor of Obstetrics, Jefferson Medical College, etc. 2 vols. Pp. 1182. With 2 coloured plates and 146 illustrations. London: Henry Kimpton, 1914. Price £2 10s. net, in cloth, £3 3s. net, in quarter Persian.

THIS, the latest of American text-books on pædiatrics, has impressed us very favourably. It is a large, two-volume work, in which the authors have endeavoured to present the fundamental principles of development and lay stress on the prevention, as well as the recognition and repair, of abnormalities and disturbances. The book deals mainly with the medical diseases of children, though surgical affections are also considered, separate chapters being devoted to diseases of the genital organs and diseases of the ear. Special attention is also given to diseases of the skin, and, in a long appendix, which comprises over 150 pages, a variety of subjects concerning the child is dealt with. Here Dr. J. M. Taylor discourses in a general way upon such points as the conservatism of infantile life, hygiene, development, both physical and mental, heredity, the teeth, deformities, tuberculosis of the spine and joints, and the influence of the ductless glands on growth.

Taken as a whole the description of the various diseases is exceedingly good, and the treatment advocated is sound and up to date, vaccine and serum therapy and tuberculin treatment being discussed in a judicious and impartial manner. Where the general excellence is so high it is difficult to single out any particular sections for especial praise, though attention must be drawn to a short but interesting chapter on blood-pressure studies in early life, a subject which is not as a rule touched upon in text-books on children.

It is impossible, however, to avoid a certain amount of criticism, and in a work of this size and importance we consider that the description given of congenital hypertrophy of the pylorus is very inadequate, a single page only being devoted to the subject. Considering the importance of and the diversity of opinion which is held concerning this condition the description of it might well have been fuller, the question of medical *versus* surgical treatment have been discussed, and the advantage or otherwise of giving drugs included. In the treatment of intussusception we do not agree with the old-fashioned methods of injection or inflation of the bowel and manipulation of the abdomen which are advocated as preliminary measures. The risk attending them is too great. Neither do we think that if the case is not seen until after the first twelve or twenty-four hours "the efforts of the medical attendant should (merely) be directed to sustaining the patient, with the hope that the process of sloughing and evacuation of the strangulated portion will occur," the patient during this time being kept under the influence of opium. So also in appendicitis the authors are, in our opinion, too much inclined to temporise and do not emphasise sufficiently the danger of the disease in childhood. Although they state that "if the diagnosis of appendicitis is certain we believe that operation is indicated, preferably in an interval," they advocate in the early stages of the disease starvation, salines, and the use of the Fowler position and of the Murphy "drop-method." Later they employ morphine in conjunction with atropine "if suffering is very great," and "in the presence of severe vomiting calomel may be given in fractional doses, though again morphine may be required to quiet it," a procedure which most English surgeons would condemn. In speaking of general peritonitis as a sequela they state that "children sometimes recover from septic (general) peritonitis. In the latter condition of affairs death is almost certain, no matter what course is pursued"—two statements which are not quite compatible. Again, in the treatment of pneumococcal peritonitis palliative measures alone are advised, no mention being made of laparotomy.

In the chapter on diseases of the blood it is stated that the splenomedullary is the commoner of the two forms of leucocythæmia and that the lymphatic variety is rare, a statement which appears in more than one American text-book on children's diseases. While admitting that this is true of adults we cannot agree that it holds good in the case of children.

There are some omissions also to which attention may be drawn. Thus we looked in vain for some account of congenital acholuric jaundice, and could find no mention of such conditions as fragilitas ossium, myatonia, or cleidocranial dysostosis. Further, we should have liked to see a separate account of Still's disease instead of a passing mention under chronic rheumatism, to which the authors admit it is not allied.

The book, of course, contains some Americanisms, but the word "fluidram" offends one's English susceptibilities. Dr. Sambon's name is twice misspelled, and, as is often the case in American text-books, there are several errors in Latin and numerous false concords in the writing of prescriptions.

In spite of these drawbacks 'Practical Pediatrics' is quite a sound text-book and one of the best produced by the modern American school. It is well bound and artistically got up. The illustrations, which are mostly reproductions of photographs, have been carefully executed and are admirable examples of the conditions which they depict. T. R. W.

The Infant Nutrition and Management. By Eric Pritchard, M.A., M.D.Oxon., M.R.C.P.Lond., Physician to the Queen's Hospital for Children, Physician to Out-Patients, City of London Hospital for Diseases of the Chest, etc. 1914. London: Edward Arnold. Pp. 265. Price 3*s*. 6*d*. net.

This is an interesting and well thought-out book on the nutrition and management of infants. It does not pretend to deal with the whole subject, but is rather an exposition of the author's views on certain points concerning the management and nutritional disorders of children.

The author's personal experience of the management of breast-fed infants leads him to advocate that the interval between the feeds should not be less than three hours, and that infants should be put to the breast regularly from the very first in order to stimulate the process of lactation in the mother. When it is necessary to feed artificially young infants who cannot assimilate cow's milk Dr. Pritchard favours pancreatisation of the milk for six hours at least, pepsin, in his opinion, being useless. The period of artificial digestion may be lessened by ten minutes every day, so that in thirty-six days the infant will be taking completely undigested milk. In this connection cases are quoted showing how suggestion influences the child both as regards feeding and in other ways.

In considering the quantity of food which infants require, the author utters a word of warning against over-feeding slum-children. Such infants are usually too warmly clad and live in hot, ill-ventilated rooms, and in this way are deprived of those essential stimulants which evoke muscular movement and create a demand for food. The result is that over-feeding predisposes to a condition of acidosis with its attendant evils—diarrhœa, vomiting, and catarrhs. The main object of treatment should be to revise the hygienic surroundings of the child so that he may be able to assimilate a fuller dietary.

The chapter on the training of nerve-centres contains some useful suggestions concerning the regulation of the bowels and the stimulation of nerve-centres by gradually reducing the supply of artificial warmth and rapidly inuring the child to cold baths.

In dealing with constipation Dr. Pritchard advises the use of petroleum and condemns the custom of giving a new-born infant a dose of castor oil thereby depriving the intestines of the mechanical stimulus afforded by the presence of meconium. To this, in his opinion, more than to any other cause must constipation in infants be attributed.

The author's views on the ætiology of rickets are also interesting. He attributes the disease to a vicious cycle consisting of an inefficient action of the liver, which may be damaged by faulty feeding or be congenitally weak, associated with a disturbed central nervous system acting and reacting on one another. The bony changes are partly explained by acidosis, partly by the activity of the hæmogenetic functions of the marrow which are called for by the existing conditions, and partly by the interruption of normal trophic impulses emanating from the central nervous system. Dr. Pritchard believes that many cases of rickets with marked bony deformity have a syphilitic taint, though his reasons for the belief are not very clear.

The foregoing will give some idea of the character of the book and of the subjects upon which the writer dogmatises. All his views may not meet with general approval, but at least they are deserving of earnest consideration as coming from a man of Dr. Pritchard's experience. T. R. W.

URSACHE UND WESEN ANGEBORENER DIATHESEN. EINE EXPERIMENTELLE STUDIE (THE ORIGIN AND NATURE OF INBORN DIATHESIS. AN EXPERIMENTAL STUDY.) By DR. HANS ECKERT. Pp. 67. Berlin: S. Karger, 1913. Price 3·50 m.

AT the German Medical Congress (Versammlung deutscher Naturforscher und Ärzte) held in Salzburg in 1910, Czerny set forth a new hypothesis on the nature of the exudative or lymphatic diathesis. According to Czerny, the diathesis is dependent upon an inherited and congenital defect in the chemical processes and composition (chemismus) of the body. Further, this defect affects especially those tissues which are marked by a relatively high water content. According to Czerny, the growth of the infant in the first year of life is not only more rapid than in later years, but it differs in nature because it is occasioned not so much by the addition of new tissue as by the retention of water. He illustrated his contention by a comparison with the growth of seedling plants which for some time is dependent upon the depôt of food substances with which the seedling is first equipped, and only later becomes proportional to the intake of substances from without. As is well known, in the case of the salts of iron this hypothesis of Czerny has the support of the work of Bunge, who, while he found a remarkable correspondence between the percentage composition of the ash of the mother's milk and the percentage composition of the ash of the body of the young animal in all constituents except iron, showed that in that one salt the ash of the body was about seven times as rich as the maternal milk. Bunge drew from this the conclusion that the young animal brings into the world with it a depôt of iron, probably stored in the liver, which served its needs during the time when it was nourished exclusively on milk which is apparently deficient in that salt.

In the present work Eckert has undertaken to test the truth of this hypothesis of Czerny, to seek proof of the existence of a depôt, in the sense of Bunge, of other constituents besides iron, and to determine whether the comparison to the manner of growth of a seedling plant can stand criticism by experiment.

Careful quantitative analysis carried out in six puppies from the same litter gave no support to the hypothesis of Czerny. The content of the growing animal body in the several constituents showed a steady increase, proportional to the diet. At no time was there a standstill or diminution in the amount, such as would occur if the assumption were true that a depôt inherited from the mother was undergoing gradual exhaustion. H. C. C.

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Original Articles.

THE ATONIC FORM OF CEREBRAL DIPLEGIA.

By Frederick E. Batten, M.D.Cantab., F.R.C.P.,
Physician to the National Hospital for the Paralysed and Epileptic, and to the Hospital for Sick Children, Great Ormond Street; and

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House Physician to the Hospital for Sick Children, Great Ormond Street.

Foerster described, in 1909, a new type of cerebral diplegia and gave detailed descriptions of four cases.

The main characteristic of this condition is an extensive hypotonia of the voluntary muscles of the body as shown by a large degree of undue passive mobility of the various joints. This hypotonia may be so extensive that even the muscles of the head and neck are affected.

There is complete inability to stand, walk, or even to sit without support. There is no power of fixation, owing to deficient action of the antagonistic muscles. When lying in bed the children are well able to move the limbs, though the movements are somewhat sudden. The tendon reflexes are present and the electrical reactions of the muscles normal.

All the children described by Foerster were mentally deficient. Two of them were completely mute at the age of three. One child of two years was able to speak a few words, and the eldest child, aged 7 years, was able to speak, though with defective articulation. All of them were unclean in their habits. In one case there was hypotonia of the legs associated with a spastic condition of the arms and extensor response of the right plantar reflex. There were also occasionally opisthotonos and choreic movements of the face and tongue. One of Foerster's photographs shows a child in a peculiar position: he is held up by the axillæ, and the legs are extended at the knees and flexed at the hips. One child died at the age of three years, after an epileptic attack with a left-sided hemiplegia. One other died when two years old from measles. The pathological examination showed in both cases an extensive sclerosis of the frontal lobes without any affection of the cerebellum. No microscopical examination was made.

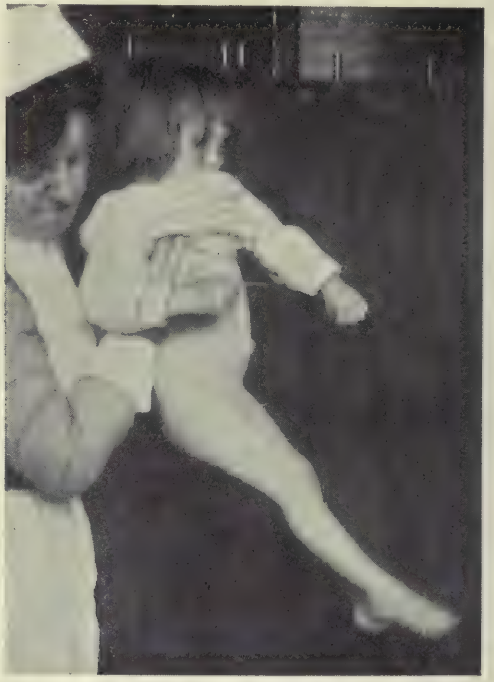

FIG. 1 (Case 1).—Shows the position of rigid extension of the legs produced when child is held up by axillæ.

Pierce Clark, in 1913, described a similar condition under the name of cerebro-cerebellar diplegia. All his cases show the same extensive hypotonia and inability to stand and walk. They were unclean in their habits, perfectly mute, and mentally deficient. All of them showed during the first few weeks of life inactivity of movements, whereas, later on, their power of movement was surprisingly good. If held up by the axillæ, the children showed a sort of epileptoid trepidation of the lower limbs. The author concludes on general anatomical and experimental evidence that the pathology of this condition is explained by a simultaneous lesion of both the cerebellum and the cerebrum.

Another case of this kind has been demonstrated by Thomas and Jumentié in the Société de Neurologie in Paris. The child had extreme hypotonia of the feet, and the limbs could be placed in abnormal positions. The arms, head, and trunk were also very hypotonic, even the tongue. The child showed choreic movements of the limbs. His speech was indistinct, but the intelligence seemed fairly good. There was no hypertonia of any kind. The Wassermann reaction was slightly positive.

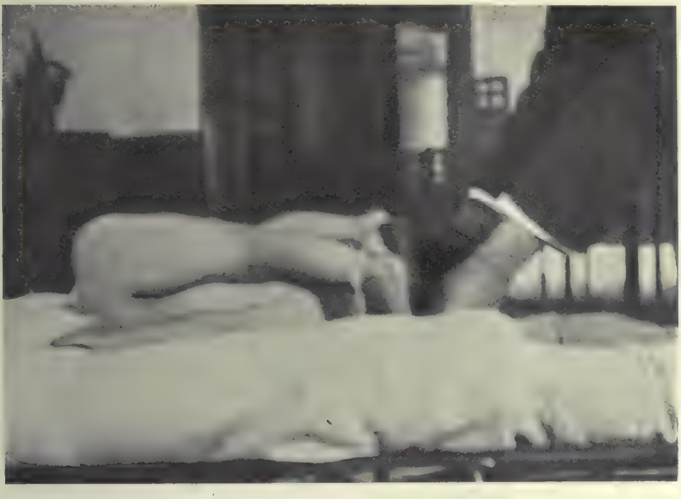

FIG. 2 (Case 1).—Shows child in "folded up" position.

The condition above described is not common, and the clinical picture is so different from that which occurs in most cases of cerebral diplegia and the pathological evidence is so meagre as to the cause of the condition that the subject is one which calls for further investigation. To the former we contribute some evidence with the hope that we may be able to deal with the latter subsequently.

Case 1.—K. A—, aged two years, the second of two children, was born as a breech-presentation and weighed 3½ lb. at birth. She has never walked, but got about on her buttocks.

On examination she is a well-nourished girl, can sit up well with straight back. She moves her arms and legs well. Her eyes and face show nothing abnormal. She cannot stand, and if any attempt is made to put her on her feet she extends them in front of her, but is unable to support the weight of the trunk. If held by the axillæ her legs go out in front flexed at the hip and extended at the knee (Fig. 1). If one tries to bend the legs in this position they are found to be rigid as in a spastic diplegia. When the child is lying in bed her limbs are found to be quite hypotonic. It is possible to "fold her up" (Fig. 2), her feet being flexed on the neck. The feet are very hypotonic and can be dorsiflexed on to the tibiæ. The knees can be hyper-extended. The knee-jerks and ankle-jerks are active. The plantar reflexes generally give a flexor response, but sometimes an extensor. The muscles respond normally to galvanism and faradism. There is no loss of sensation.

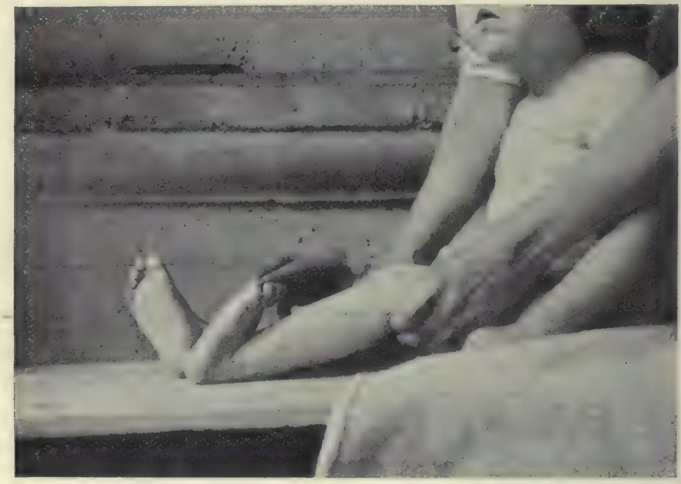

Fig. 3 (Case 2).—Shows the extreme hypotonia of the feet.

The child can only say a few words, but understands everything said to her. An X-ray photograph shows in addition a bilateral congenital dislocation of the hip-joints. An attempt was made to teach the child to walk by fixing the legs in an extended position in celluloid splints with the aid of a walking machine. But although the child made some attempt at progression she never could stand erect or walk by herself.

Case 2.—C. H—, aged 3 years. The child has been weak from birth. He is the first of two children, born as a breech presentation after version. He has been clean in his habits since the age of eighteen months. He has never been able to stand or walk. On examination he is found to be a well-nourished child, can sit up and hold his head straight. There is a certain amount of kyphosis of the spine in the sitting position. He has difficulty in getting up because he cannot balance properly. Instead of lying down he drops down powerless according to gravity. There is marked hypotonia of the feet, which can be bent on to the tibiæ (Fig. 3.) There is hyper-extension of the knee-joints and a certain amount of hyperflexion of the hip-joints. He cannot be "folded up," but can be placed in abnormal positions. There is a certain amount of flexor and adductor spasm (Fig. 4). When suspended by the axillæ his legs are extended and found to be rigid. There is marked hypotonia of the different joints of the arms. When lying in bed he can move his arms and legs freely, but all his movements show a great deal of inco-ordination. When placed on his feet he cannot stand unsupported, and when he attempts to walk his legs perform inco-ordinate movements This ataxia is characterised by a lack of proportion of the movements. His favourite position is sitting on the side of his cot, supporting himself by the top railing, dangling his legs through the bars. The tendon reflexes are active. The abdominal reflexes show a marked overflow, so that the thigh muscles contract. The plantar reflexes give a flexor response. There is no loss of sensation, and the muscles respond normally to faradism and galvanism. The fundi are normal. He performs continuous sucking movements with his lips. There is nothing abnormal in the face. He seems fairly intelligent, but cannot talk. He can, however, say a few words without proper articulation. The Wassermann reaction is negative, and the cerebrospinal fluid is normal. He is now taught to walk by fixing his limbs in a rigid position in celluloid splints. Though he makes attempts to progress with the aid of a walking machine there is much inco-ordination, not only of legs, but also of the trunk, which causes it to drop forward.

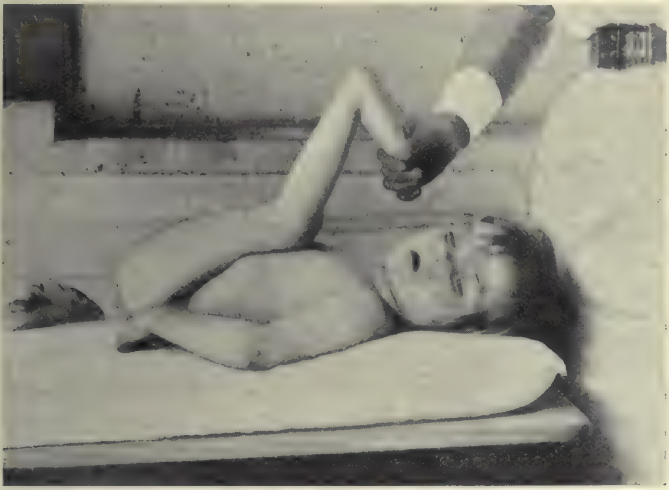

FIG. 4 (Case 2).—Shows the hypotonic foot with tone preserved in flexors of thigh.

This child was formerly seen by Oppenheim, who considered it as a case of myatonia congenita.

CASE 3.—L. P—, a girl, aged 3 years, born as a breech presentation. She is the last of eleven children, six of whom died in infancy. She has had screaming and epileptic fits since the age of two years. She has never been able to stand or walk and never spoken a word. On examination she appears to be undersized and badly nourished. She is able to sit up by herself, and can remain in the sitting position, and holds her head straight. There is kyphosis of the spine in the sitting position. When lying in bed she moves her arms and legs freely. There is marked hypotonia of the arms. The shoulders are loose, and the arms can be bent backwards to an extreme degree. The feet are very hypotonic and can be dorsiflexed to an extreme degree. There are hyperextension of the knee-joints and exaggeration of all the movements of the hip-joints. The child can be "folded up" to a certain extent, and there is no spasticity of any kind. The tendon reflexes are only with difficulty obtained. The plantar reflexes give a flexor response. When placed on her feet the child drops powerless down without making any attempt to stand or walk. She does not talk and is obviously mentally deficient. No changes of the fundi oculorum are found. The Wassermann reaction is negative, and the cerebro-spinal fluid is normal.

Case 4.—D. L—, a girl, aged 2 years and 10 months. She was a full-term baby, and the labour was quite normal. She is an only child. Nothing abnormal was noticed until the age of fourteen months, when the child started to have screaming fits. She has never been able to stand, walk, or talk. On examination she appears to be a well-nourished child. She is entirely mentally deficient. When lying in bed she throws her limbs about, and continually rubs the hands. She screams loudly when touched. There is an internal squint of the right eye, but no ocular palsy. The optic discs and maculæ are normal. She has a high palate. She does not sit up by herself, but can remain in the sitting position when supported. She has loose shoulders and a marked hypotonia of the hands, which can be dorsiflexed to an exaggerated extent. She has a marked hypotonia of the legs, especially of the hip-joints. There is not much hypotonia of the feet and no spasticity. The knee-jerks are just present, weaker on the left side than on the right. The ankle-jerks are present; the plantar reflexes are indefinite. There is no inco-ordination. She cannot support the weight of her body, and there is complete inability to stand or walk. The muscles respond normally to galvanism and faradism. The Wassermann reaction in blood and cerebro-spinal fluid is negative, and the cerebro-spinal fluid on chemical and cytological examination shows no changes.

These four cases have in common a hypotonic condition of the voluntary muscles of the body, especially of the lower limbs, and a deficiency of the synergetic action of the muscles, as shown by the inability to stand or walk, but there is no loss of power in performance of active movements. One case shows a marked degree of ataxy, which is characterised by a lack of proportion of the movements (dysmetria of Thomas).

In two of the cases there is also a certain amount of hypertonia, as evidenced by the adductor spasm and overflow of the abdominal reflexes, in one case there is an occasional extensor response of the plantar reflexes. There also was in two cases rigidity of the lower limbs in a certain position, namely, when the children were suspended by the axillæ.

Not one of our cases shows the extreme hypotonia described by Foerster with the exaggerated flexibility of the trunk, head, and neck.

Two of the children are markedly mentally deficient and mute, and their condition resembles closely that described by Pierce Clark.

It is interesting to note, however, that according to the statement of the parents these children have shown progressive degeneration.

Three of the children were born as breech presentation.

One showed another malformation, namely, congenital dislocation of the hips.

From the hypotonia associated with rickets these cases are easily distinguished by the absence of any characteristic rickety bone lesion.

The diagnosis from Oppenheim's myatonia congenita, which we consider as the simple atrophic form of the myopathies, remains entirely based on the condition of the tendon reflexes and the electrical reactions, which in the cases above described are normal.

The most interesting feature of this group of symptoms is the loss of tone and synergetic power associated with well-preserved active movement.

The pathology of this condition is practically unknown, and we may well suppose varies as much as the clinical picture of this and of the other forms of cerebral diplegia.

Edinger, in his summary " On the Cerebellum," comes to the conclusion that the maintenance of tonus is due to afferent impulses to the cerebellum from muscles, tendons, and from the labyrinth. They are transmitted by the nuclei of the medulla, pons, and mid-brain. Fibres of those centres are in connection with the basal ganglia. It is on a lesion of this system which includes the whole of the cerebellum and also is largely represented in the cerebral cortex (frontal lobes, temporal lobes, and motor region) that the pathology of this condition must be based.

Sherrington's " decerebrated rigidity " has recently been clinically demonstrated in the cases of aplasia of the cerebral hemispheres described by Sutherland and Paterson. There is good evidence to show that destruction of the cerebellum gives rise to loss of tone, though ablation of the cerebellum does not abolish the "decerebrated rigidity," and cerebellar lesions cause other symptoms as well as hypotonia.

Foerster, who expected a cerebellar lesion, found in two cases in which he obtained a post-mortem examination a sclerosis of the frontal lobes with macroscopically intact cerebella. There is no microscopic evidence, and there is nothing known of the conditions of the olives and the vestibular nuclei and the nuclei of the tegmentum.

We may be justified in supposing a gross cerebellar defect in the one of our cases with the cerebellar ataxia. It will depend on the condition of the cerebrum how much this child will be able to improve. We know that interruption of the cerebro-cerebellar path or ablation of the frontal lobes exaggerates disturbances of the equilibrium caused by a simple cerebellar lesion.

In those cases where there is hypertonia as well as extensor response of the plantar reflex we will probably find that the pyramidal tracts are affected as well. No satisfactory explanation can be given why the hypertonia is brought on by the suspension of the children by the axillæ. It is a kind of reflex spasticity.

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CARDIAC FAILURE IN A CHILD, AGED SIX YEARS, ASSOCIATED WITH ATHEROMA OF THE PULMONARY ARTERY AND EXTREME DILATATION OF THE RIGHT VENTRICLE.

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AND

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ON May the 21st, 1913, a well-developed little girl, aged 5 years, was sent to the Bristol General Hospital by Dr. Newsome, of Pill. The history given by her mother was that, ever since an attack of bronchitis eighteen months before, she had been increasingly disabled by shortness of breath. No history of any other illness that could have had any causal relation with the condition which she now presented was forthcoming. Dr. Newsome told us that there was absolutely nothing in the family history to hint even faintly at a syphilitic factor. The child was very blue and obviously dyspnœic.

The fingers were not actually clubbed, but the nails were abnormally curved and the tips were shiny. No œdema was noted. The pulse was regular. Examination of the chest showed that the heart was enlarged to the left, the apex beat, which was wide and feeble, lying in the fourth left interspace a little way beyond the left mammary line. At this time no distinct enlargement to the right was made out. At, and external to, the point of maximum impulse a long, but not loud, systolic murmur was heard, and the pulmonic second sound was doubled. Neither at this time nor subsequently was any bruit heard at the base of the heart, though it was carefully looked for several times. At the bases of both lungs there were many alveolar *râles*, but the percussion note was not impaired. After a delay occasioned by the pressure of cases on the female medical beds, the child was admitted under Prof. J. Michell Clarke, whose notes (to which he has kindly allowed us to turn) describe a state of affairs identical with that noted above. The urine at this time contained a trace of albumin. It was also noted that the liver was palpably enlarged, but not the spleen. Unfortunately, after a stay of only one week she was taken home by her parents. The bronchitic signs were much less pronounced, but they had not disappeared.

On March the 25th, 1914, she was sent to the General Hospital once more, and admitted shortly after. The most striking feature of her case, apart from the dyspnœa and cyanosis, which were much more pronounced than on her last visit, was the supervention of œdema of the face, feet, and ankles. Her mother said this was variable, and certainly it diminished during the time she was waiting for a bed with a rapidity that was quite deceptive as an index of the general course of her case. When she came up the first time, on March the 25th, her face was so puffy that it seemed impossible to believe that she was not suffering from Bright's disease; however, there was only the smallest trace of albumin in the urine and no casts, though there were a few pus cells and many bacilli. The total daily output was small. There was a good deal of cough with expectoration of thick phlegm which, however, had no offensive smell. The fingers were no more clubbed than at her last visit. She also complained of pain in the stomach, increased by food, and of occasional vomiting. An examination of the chest discovered bronchitic signs much like those observed at the previous sojourn in hospital. The point of maximum impulse lay in the fifth left interspace, about one finger's breadth outside the nipple line; it was diffuse and not powerful. During expiration pulsation was palpable at the pulmonic area. A faint pulsatile movement could also be felt to the right of the sternum. At, and external to, the point of maximum impulse a late systolic thrill was felt, and in the same area a long, definite, but not very loud bruit was heard, beginning late in systole and running up to and perhaps into the second sound. This bruit was conducted into the back by way of the left axilla, and was distinctly heard at the inferior angle of the left scapula. The pulmonic second sound was accentuated, but no murmur was heard at the base, or in the supraspinous fossæ behind, or in the neck. The cardiac dulness extended from the left anterior axillary line to a finger's breadth to the right of the sternum; upwards it reached to the inner end of the second left interspace. A skiagram showed very clearly that the cardiac volume was increased to the right of the sternum, and also upwards and to the left. During the days that intervened between her coming to the out-patient room and her admission to the wards, arrangements were made for taking an electrocardiogram, but the child, who lived at some distance from the hospital, was too ill to be brought up and back in one day. When she was admitted there was reason to think she had improved, for the bronchitic signs had disappeared and the œdema was very much less, but she was very listless and sleepy, and within two days after admission she died rather suddenly. Notes of the post-mortem examination, made on the same day, follow.

On opening the chest the heart was found to be considerably enlarged, owing to the dilatation of the right ventricle, which had come to occupy the whole anterior surface of the heart. On opening the heart the chamber of the left ventricle was found to be exceedingly small; the muscle wall was of good colour and fairly firm and measured 1 cm. in thickness. The left auricle similarly was of small size with thickened walls.

The cavity of the right ventricle was greatly dilated (holding approximately 4 oz.), with considerable hypertrophy of the moderator band and all the papillary muscles, which also showed fibrous thickening of the subendothelial tissues. The right auricular cavity was dilated, the wall measuring 5 mm. in thickness.

The foramen ovale was closed except for a pin-point orifice at the inferior border. There was no opening in the undefended space of the septum, and the ductus arteriosus was represented by a fibrous cord only. The mitral opening was normal in size; its aortic cusp showed some atheromatous patches, particularly on its ventricular aspect, and the vessels at the root of the valve flaps were congested. The aortic orifice admitted the little finger; the valve segments were somewhat clouded and thick, and had small spots of atheroma at the junctions of the lunules, whilst some recent atheroma was seen along the margins of the pockets, and at the insertion of the cusps into the root of the aorta. The tricuspid valve admitted two fingers, its margins were firm and thickened, and the endothelium on this surface of the valves was transformed into a dense white membrane with subendothelial nodosities here and there.

The pulmonary orifice measured 15 mm.; the valve segments showed no sign of disease. In the descending aorta were long streaks of atheroma along its length, particularly surrounding the orifices of its branches. The pulmonary artery and its branches were the seat of a very pronounced nodose atheroma.

Microscopically the atheromatous patches showed great thickening and multiplication by lamination of the endothelial tissues; the internal elastic tissues and loose subendothelial elastic fibres were replaced by a highly cellular loose areolar tissue, the cells being round cells with a reticular nucleus and a nucleolus. Very few fibroblasts were to be seen. Beneath this cellular layer there was a well-organised tissue composed of fibres loosely arranged, but in two or three patches aggregated into a dense nodule resembling a scar. There was no cellular infiltration of the deep elastic layer until the line of demarcation between that layer and the muscle tissue was reached, when a very obvious round-celled infiltration was observed. The capillaries in the muscle layer showed a very marked endothelial proliferation, as did those within the elastic layer. There was no evidence of acute gummata, nor were any treponemata to be found in sections stained with silver.

The muscle of the ventricle and auricle appeared normal; there was no infiltration of the connective tissue or any focal areas of cellular aggregation, and the blood-vessel walls showed no sign of any disease. There was no evidence of disease in the mediastinal glands.

COMMENTS.

(1) *Ætiology.*—Atheroma of the pulmonary artery has been encountered under two sets of circumstances. As an accompaniment of bronchitis, emphysema, and disease of the mitral valve, it is not very rare. In such cases it is ascribed to hypertension in the pulmonary artery, secondary to the disease of heart or lung. In another much smaller group of cases the arterial lesion appears to be primary, *i. e.* it is not associated with any intra-thoracic disorder that can be held responsible for its development. It is in this second group that we place our case; for the bronchitic phenomena

that were present during life were mild in degree, and were proved by post-mortem examination to have been due to passive hyperæmia. They were an effect of the cardiac lesion, and not its cause. Possibly some of the cases in which pulmonary atheroma has been regarded as a sequela of bronchitis are also of this order; for instance, in an old post-mortem book at the Bristol General Hospital, we have come across the case of a man, aged 23 years, to which the diagnosis of "bronchitis" was attached, in the autopsy as well as in the clinical notes; yet there is no doubt, from the pathological data given, that atheroma of the pulmonary artery and dilatation of the right heart were the conspicuous changes.

An excellent summary of the whole subject is to be found in a monograph by Posselt published in 1908. From this it would seem that though the number of cases in which the atheroma was apparently primary is small (13), yet the average age of such cases (39) is lower than that at which serious atheromatous changes are commonly noted in the aorta and systemic arteries. Since this was written Sir Leonard Rogers, of Calcutta, has published an account of ten similar cases occurring in Bengal, which show that in that district primary atheroma of the pulmonary artery is not so rare as it is in Europe. In his cases also the average age was only 32. The youngest patient was 12, and we can find no record of any younger. Rogers surmises that syphilis may have been responsible for some of his cases, but in our patient this was fairly excluded, not only on clinical grounds, but also by the absence of spirochætes from the arterial lesions and by the lack of any post-mortem evidence of syphilitic infection. Posselt, in his monograph, lays stress on the importance of severe infections, particularly variola, in earlier life, but in our patient there was no hint of any such factor, apart from the presence of *B. coli* in the urine. It should be added that in a few old people the pulmonary arteries share in the sclerotic process which has also invaded the systemic vessels.

(2) *Pathology.*—An interesting problem is the relation between pulmonary atheroma and failure of the right ventricle. Though the musculature of the right ventricle showed but little microscopical alteration, this does not negative the view that its functions were profoundly affected; the disproportion between interference with myocardial function and perceptible alteration of myocardial structure is a commonplace of cardiac pathology. The fact that the right heart was enormously dilated, out of all proportion to the enlargement of the left side, affords tangible proof of the extent to which its musculature was injured. The question that one naturally asks is

—Did the arterial lesion cause the ventricle to dilate, or did both phenomena own some common origin? To this question our case gives no sort of answer, for there was no discoverable cause for the arterial disease or for the ventricular dilatation apart from the arterial lesion.

(3) *Symptoms.*—In our case the most striking clinical feature was deep cyanosis. This seems to have been noted in many of the cases that fall within the heading of primary pulmonary atheroma. Second to this comes œdema, also noted in a majority of the recorded cases. In many of these it was, as in our case, a late phenomenon. In our case the swelling was so great and so general that it seemed almost incredible that the urine should be normal, but it is quite certain, on post-mortem as well as clinical evidence, that there was no nephritic factor in the case. The physical signs differed widely in the reported cases; in several the diagnosis made during life was that of congenital malformation of the heart, while in others an acquired lesion of the mitral valve was suspected. We suggest that the coincidence of cyanosis and œdema with evidences of enlargement of the right heart, and absence of the characteristic signs of congenital malformation or of acquired mitral disease, might point to a diagnosis of pulmonary atheroma. Rogers was actually enabled to make the diagnosis in one of his cases. We lay stress on the skiagraphic method of discovering enlargement of the right heart, since it was very serviceable in our own case. It is possible that a condition of this kind might reveal itself by some characteristic form of electrocardiogram; in our case the child grew worse so rapidly, and died so soon after admission, that we were unable to take a record.

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HÆMATOMA OF THE LOWER LID IN AN INFANT, AGED 5 MONTHS: AN UNUSUAL MANIFESTATION OF INFANTILE SCURVY.*

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A FEMALE infant, aged 5 months, was brought to the Eye Department of the Queen's Hospital for Children, London, on January the 7th, 1915.

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* The case was reported to the Section for the Study of Disease in Children of the Royal Society of Medicine on January the 22nd, 1915.

The history of the case was to the effect that the infant did well until the middle of last December, when she developed "thrush," diarrhœa, and vomiting, symptoms from which she made a fair recovery in the course of about a fortnight. On January the 3rd a small black spot or line was noticed in the skin of the right lower eyelid. There had been no injury to the parts. No especial importance was attached to the mark; but on the following morning the eyelid was swollen and discoloured, and since then no particular change had been noticed in the condition of the parts. On January the 6th, the day before the infant attended the hospital, the medical practitioner under whom the patient had been made a puncture into the distended lower lid, with the escape of what was described as "blood and matter."

As to diet, for the first two months of life the baby was breast fed, and after that Nestlé's milk was given exclusively. Since recovery from the attack of December last nothing has been given in the way of food except albumin water. No patent foods have been used in bringing up the infant.

On admission, the right eye was completely closed by the pressure of the lower lid, which was enormously distended with blood. The swollen parts were almost chocolate-brown in colour. A recent puncture, exuding a little blood, was present at about the junction of the outer third with the inner two-thirds of the lower lid. The upper eyelid was not swollen, and exhibited merely a few insignificant patches of cutaneous ecchymosis. The eyeball was not protruded. The cornea was clear. Temperature 99° F. The child had some colour in her cheeks, and although somewhat wasted (weight, 11 lb. 6 oz.) yet looked tolerably well. No tenderness on handling. No swellings about legs or arms. There were no teeth, and the gums were in excellent condition.

A provisional diagnosis of infantile scurvy was made, and the child admitted as an in-patient. She was placed on equal parts of "raw" milk and water. One teaspoonful of raw meat juice was given every three hours, alternatively with a similar quantity of orange juice. The affected eyelid was treated with compresses of hydrogen peroxide.

The improvement in the state of the eyelid was striking. Two days after admission the condition was less marked, and the puncture mentioned above was healed. A couple of days later the baby could open the eye somewhat, and seven days after admission the eye could be widely opened, and the lower lid, although blood-stained like a "black eye," was not swollen. In fact, in the course of a single week under anti-scorbutic diet changes had taken place that in ordinary cases would probably have spread over three weeks or a month.

The infant's general health, unfortunately, did not improve *pari passu* with the local condition. It is true that during the week's stay in hospital the child gained 3 oz. in weight, but on January the 8th, the day after admission, the pulse was 172 per minute, and the temperature 102·8° F. Since then the temperature has not fallen below 101·4° F., and has generally been between 103° F. and 104° F., without any definite cause having yet been found to account for it. The stools, which have numbered from three to seven a day, were found to contain blood on January the 12th and 13th. On January the 14th the urine contained a trace of blood.

On January the 16th signs of meningitis developed, and the child died on January the 18th. Post mortem pneumonia of both lungs and pneumococcal meningitis were found.

Comments.—The foregoing, I think, can only be regarded as an instance of infantile scurvy with unusual ocular manifestations. Apart from the difficulty of accounting for a non-traumatic hæmatoma in so young a child on any other view, there is a certain amount of evidence in support of the suggestion: (1) The extraordinarily rapid subsidence of the effused blood under an anti-scorbutic diet, and (2) the discovery of blood in (*a*) the stools and (*b*) the urine. On the other hand, the classic signs of infantile scurvy were conspicuous by their absence. The case is further peculiar in that the ocular manifestations preceded any other signs of scorbutus. For example, melæna did not develop until nine days, and blood in the urine until eleven days, after the eye signs. In this point the case recalls one reported by W. T. Holmes Spicer* in an infant, aged 7 months, who was brought because the right upper eyelid was tensely swollen and blood-stained. There were no other manifestations of infantile scurvy. Rapid improvement took place once the child was placed on suitable diet, together with cod-liver oil. A case analogous with my own has been placed on record by K. Steindorff † in a child, aged 7 months, whose left upper eyelid was greatly distended by blood and of a bluish-red colour. Lesions of the gums were present. The child's body was exquisitely tender when touched. Traces of blood were found in the urine. One small conjunctival ecchymosis was present, but there were no retinal changes.

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* 'Trans. Ophthal. Soc. U.K.,' 1892, xii, p. 33.

† 'Zeitschr. f. Augenheilk.,' 1911, xxv, p. 180.

PNEUMOCOCCUS INFECTION AND IMMUNITY.*

By Rufus I. Cole, M.D.

Most of the cases of acute lobar pneumonia occurring in all parts of the world are apparently caused by *Diplococcus pneumoniæ.* Certain observations, however, indicate that all these cases that are apparently due to pneumococci do not have an identical ætiology. Certain ones are due to *Pneumococcus mucosus,* first described by Schottmüller as *Streptococcus mucosus.* Moreover, on the basis of immunological differences, it is possible to classify the other pneumococci in three groups. In two of these groups, which we have numbered Types I and II, have been placed organisms having immunological characters peculiar to the respective group. All the organisms belonging to Type I, for instance, are agglutinated by a serum produced by the immunisation of an animal to any one of them, and such an immune serum also protects mice against any one of the group. In Group III are placed all the organisms of the *Pneumococcus mucosus* type. These organisms are not agglutinable, and an immune serum does not protect mice against them. In addition to the organisms belonging to these three groups, however, there are a number of organisms which have no common immunological characters ; each one appears distinct. These organisms have been grouped together as Group IV, or Type IV.

Cultures received from Prof. Neufeld in Germany indicate that the same types of organism are prevalent in Germany as are found here, and studies made by means of our immune serum by Dr. Walker in Boston, and Dr. Lewis at Philadelphia, indicate that similar organisms are found in cases of pneumonia in those cities. In 150 cases in which the type of organism causing the disease was determined, 38 per cent. proved to be due to organisms of Type I, 30 per cent. due to organisms of Type II, 11 per cent. due to organisms of Type III, and 21 per cent. to organisms of Type IV. About the same relative frequency of occurrence of the different types has been found in Philadelphia by Dr. Lewis. Apart from the organisms of Type III, there are no constant fixed morphological or cultural types among these different races. The clinical manifestations of infection due to these different types, however, are not identical certainly as regards severity. Among 103 cases not receiving specific treatment, the mortality among those due to organisms of Type I was 25 per cent.;

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* The Frederick A. Packard lecture delivered before the Philadelphia Pediatric Society on November the 10th, 1914.

among those due to organisms of Type II, 32 per cent.; among those due to organisms of Type III, 47 per cent.; and among those due to Type IV, 6 per cent. From the standpoint of prognosis alone, therefore, the determination of type of infection in the individual case is of considerable importance. The conditions in pneumonia are only different in degree from those found in typhoid fever and dysentery, where infections due to organisms of different types occur.

Studies made by Dochez indicate that the type of organism commonly found in normal mouths is that which we have called Type IV. In two instances, however, in the mouths of persons very closely associated with pneumonia patients, pneumococci of the fixed types have been present. Dr. Lyall has shown that the pneumococci commonly present in the mouths of patients suffering from tuberculosis are also of Group IV, and in only two or three instances were pneumococci of the fixed types present. In the mouths of patients convalescing from pneumonia pneumococci of the fixed types usually disappear within a few weeks after crisis, and are replaced by organisms of the fourth group.

These studies indicate that it may be justifiable to consider all persons having pneumococci of the fixed types in the mouth as carriers of infection. The facts, however, are still too few to justify conclusions as to the best practical measures to be taken for the prevention of pneumonia. Certain observers have apparently observed the transformation of one type of pneumococcus into another—even pneumococci into streptococci, and *vice versâ*. In our own personal experience, however, we have not seen such a transformation of one type into another. A study by Dr. Chickering of the agglutinins present in the blood of patients suffering from pneumonia also indicates that the type of organism in any given case does not change—certainly after the infection has actually commenced. Until the evidence in regard to transformation is more definite, it does not seem necessary to take it into too serious account in our consideration of the epidemiology of pneumonia.

Intoxication.—It has so far been impossible to detect by chemical or biological means the presence of poisons, either in the media in which pneumococci have been cultivated, or in the body fluids of animals dying from infection with these organisms. Lately, considerable stress has been laid on the importance of bacterial anaphylatoxins, as described by Friedberger, in producing the symptoms of infection. The anaphylatoxin theory assumes that the intoxication is due to split products of the bacterial protein. According to Friedberger the ferment causing the splitting is supposed to be present in the serum, but the demonstration by Neufield and Dold, and also by Rosenow, that autolysed bacteria, in the absence of serum, are toxic has required that the theory be modified so as to presuppose that the ferments are present in the bacterial bodies. We have been able to show, however, that the bacteria simply dissolved in dilute solutions of bile, or even brought into solution by freezing and grinding, are also toxic. Since, in the latter experiment, digestive processes can with all probability be excluded, it seems reasonable to believe that the toxic effects produced by these various solutions are due to preformed substances within the bacterial cells, which are set free when the bacteria go into solution. We have also shown that such solutions of bacterial cells are hæmolytic. By immunisation of animals it has been possible to produce a serum which neutralises the hæmolytic effects of the toxin, but, so far, it has been impossible to obtain a serum which neutralises the toxic effects.

The evidence is still very inconclusive, however, that either one of these reactions is of significance so far as intoxication in lobar pneumonia is concerned. The experimental evidence indicates that the symptoms are due to the action of the living bacteria, rather than to the action of substances contained within the dead bacterial cells. Pneumococci, when growing in blood-containing medium, or when growing within the animal body, are able to transform oxyhæmoglobin into methæmoglobin. An analytic study of this reaction has suggested a possible way in which pneumococci may produce their effects without the production of a soluble poison. This study indicates that the transformation of oxyhæmoglobin into methæmoglobin is due to a modification of oxydation and reduction processes in the medium immediately surrounding the bacteria. If this be true, it is possible that an analogous reaction may be responsible for the toxic action of pneumococci on tissue cells. A difficulty, however, arises in applying this theory to pneumonia, since early in the disease there is apparently no wide distribution of the organisms. It is conceivable that in the early stages the symptoms are non-specific in character, and only in the later stages of the disease, when the pneumococci are widespread throughout the body, is the intoxication truly specific in nature.

In the last analysis, however, the exact nature of the intoxication in pneumonia is still obscure.

METHOD OF SPECIFIC TREATMENT.

The method of specific treatment of bacterial infection for which there exists, at present, the best experimental justification is by means of specific immune serum, passive immunisation. The diseases in which the best results from this form of treatment have been obtained are diphtheria and tetanus. The serum employed in these diseases is antitoxic. It is for this reason that we have made such great efforts to determine the nature of the intoxication in this disease. In spite of the fact that the evidence is not very strong that the toxic substances isolated by solution of the bacterial cells play any great *rôle* in pneumonia, we have, nevertheless, attempted to produce immune serum to such substances. As previously stated, however, such an immune serum has very slight antitoxic power as tested in guinea-pigs, and it has also been found to have only slight protective action when injected together with living organisms. The efforts, therefore, to produce an antitoxic serum which would be of use in the treatment of this disease have so far been unavailing. On the other hand, that it is possible to produce immune sera having high protective power against pneumococci by the injection of repeated increasing doses of the living bacteria has been known for a long time. Immune sera produced in this way have in fact been largely employed in the past in the treatment of pneumonia, but the clinical results obtained have not justified their continued extended employment. Further experimental studies, however, have disclosed several probable reasons why such immune serum has been of little or no value. In the first place, a pneumococcus immune serum is effective only against the type of organism used in the process of immunisation. If the infection is due to an organism of Type I, for instance, only an immune serum produced by the injection of organisms of Type I, will be of any value. In order to render an anti-pneumococcus serum useful in any type of pneumonia it would be necessary first to produce a serum with high protective power against the type of organism concerned ; second, to have a satisfactory method of standardisation of such serum ; and lastly to have a method for quickly determining the type of organism in each individual case. These conditions have now been satisfactorily met, as far as organisms of Type I and Type II are concerned. As regards the organisms of Type III, while high active immunity can be produced against them, the serum of such actively immunised animals is entirely without power of preventing infection of other animals. As before stated, each organism of Group IV seems to be absolutely distinct, so that treatment of cases due to this type of organism would be practically impossible.

There are two additional reasons why the employment of immune serum as it was carried out in the past was not likely to produce favourable results. First, it was not used in sufficiently large amounts, and second, its employment was generally made too late in the disease. On the basis of experimental evidence so far obtained, it seems that if treatment be given in large amounts, and not too late in the disease, the use of immune serum against organisms of Types I and II should be useful in the cases of pneumonia due to these organisms respectively. It has been found possible to produce a serum of great protective power against organisms of Type I and Type II. In the clinical studies so far carried out, the serum treatment of cases due to organisms of Type I has yielded more promising results than the serum treatment of cases due to organisms of Type II. Judgment as to the value of the serum has not been based on mortality statistics alone, but the following two facts are considered as evidence of the value of the serum. First, where the blood cultures have been positive before beginning treatment, after one dose of serum, and before the second was given, cultures from the blood have been sterile. Second, it has been found that in the treated cases the appearance of immune substances in the blood occurs much earlier than it does when no such specific treatment has been administered. While the employment of large doses of serum such as we have used is usually followed by so-called serum sickness, this, in future, will undoubtedly be avoided to a large extent by the employment of concentrated serum.

Stress has been laid on the work carried out in the hope of finding a rational basis for serum-therapy, rather than on the actual practical results already obtained. It is only by discovering the underlying principles that we can hope to obtain satisfactory measures for combating this terrible infection. We can only hope that careful experimental studies have given us justification for the employment of immune serum in the way I have mentioned, and that the practical results on a large series of cases may confirm the conclusions drawn and the results already obtained.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, January the 22nd, 1915.

The President, Mr. T. H. Kellock, *in the Chair.*

Case of Congenital Syphilis.—Dr. F. D. Saner showed a girl, aged 9 years, who had been apparently quite healthy until just over two years ago, when she had some pain and stiffness in the left elbow and ankle-joint. Some months later a small hard lump appeared about the centre of the forehead, which gradually enlarged and finally ulcerated. The left leg became very deformed, and for nine months before admission the child was unable to walk.

No specific treatment had been given until the child was admitted to hospital on November the 11th, 1914. She was then extremely wasted and anæmic, did not eat or sleep. There was a large, circular, foul-smelling ulcer, with a sloughy base, in the centre of the forehead, quite half as large again as the present condition. The eyes were almost closed from œdema of the upper lids. The liver and spleen were distinctly palpable. Wassermann's reaction was positive. Since admission hyd. c̄ creta 1 gr. had been given three times a day, and an inunction of ung. hydrarg. ½ dr. once daily. In addition, pot. iod. 5 gr. c̄ inf. gentian co. ad. 2 dr., *t.d.s.*, has been given, and sanitas fomentations to the forehead. A hydrogen peroxide mouthwash had been used, and the treatment has been very well borne.

The child had gained 12 lb. in weight since admission, and her general condition was satisfactory.

Case of Enlarged Liver in a Boy, aged 15 years.—Dr. H. W. Barber and Dr. F. D. Saner showed a boy, aged 15 years, admitted to hospital on December the 27th, 1914, for pain in the right side, which had only been present for a few days. The boy was of average development for his age, and there is no history of any previous illnesses. The liver was considerably enlarged; on the right side its lower border nearly reached the iliac crest; in the mid-line its margin was just below the umbilicus, and it could be traced to the left costal margin at the level of the ninth costal cartilage. The spleen was not enlarged. The Wassermann reaction was positive. There was no eosinophilia.

Hæmatoma of the Lower Lid in an Infant, aged 5 months: an unusual Manifestation of Infantile Scurvy.—Mr. Sydney Stephenson (*v.* p. 77).

Polio-encephalitis with Ocular Manifestations only.—Mr. Sydney Stephenson and Dr. Sydney A. Owen showed a case in a girl, aged 8 years. She had gone to bed in her usual health, but the next morning the eye was turned, and she complained of pain over her right brow. Examination three days later showed slight ptosis of the right eye, which was directed outwards and upwards. There was a defect in the downward and inward excursions of the eye. The secondary deviation was outwards and a little downwards. Diplopia was crossed, and the false image lay at a lower level than the true, its upper end inclined outwards. The signs therefore indicated paresis of the right inferior rectus. The right pupil measured 6·5 mm. and responded sluggishly to light. The left measured 5 mm. and was fairly active. There were no other signs of nervous disease

Infantile Paralysis with Excessive Knee-jerk.—Dr. Sheffield Neave showed a boy, aged 2 years. The right leg presented flaccid paralysis, deficient response to electrical stimuli, wasting of the calf-muscles, excessive knee-jerk, and extensive plantar response.

Congenital Heart Disease and Ulcerative Sore Throat.—Dr. J. D. Rolleston.—A male infant, aged 11 months, was admitted to hospital on

December the 6th, 1914, certified to be suffering from diphtheria, on the eleventh day of disease. The father had always been healthy, but the mother had been an in-patient at the Brompton Hospital on several occasions for rheumatism with cardiac complications. The child had always been delicate and blue from birth. Clubbing of the fingers had been noticed since he was aged 2 months.

On admission the child appeared very ill. There were membranes on the tonsils, pillar, and uvula, and a profuse nasal discharge. The heart sounds were clear but rapid. There was a trace of albumin in the urine. A large dose of antitoxin was given on admission and on the following day. A few organisms resembling diphtheria bacilli were found in the cultures, but cocci were predominant.

On December the 8th a loud systolic murmur was audible all over the præcordium. There was marked ulceration of both tonsils. No Vincent's organisms were found in the throat smears. The ulceration gradually spread over the uvula and palate.

On December the 13th stridor and a hoarse cough developed, and there was much difficulty in swallowing. The symptoms persisted, and the general condition became worse until death took place from bronchopneumonia on December the 20th. The heart showed the following anomalies:

(1) Transposition of the great arterial stems, the aorta arising from the infundibulum of the right ventricle, and the pulmonary artery from the left ventricle.

(2) Marked deficiency of the interauricular septum, which was represented by a narrow band 1·5 cm. long by 0·5 cm. broad. The foramen primum lay anterior to it, and posteriorly there was a widely patent foramen ovale.

(3) An intraventricular foramen, 1·2 cm. in diameter, in the "undefended space."

(4) Stenosis and hypoplasia of the pulmonary artery, the valve of which had only two cusps.

The fauces and larynx showed ulceration of the tonsils, frenum, epiglottis, right aryteno-epiglottidean fold, and deep ulceration of the laryngeal portion of the pharynx on each side, especially on the left, exposing the muscular tissue and eroding the thyroid cartilage.

Acute Atrophy of the Liver.—Dr. J. PORTER PARKINSON showed a specimen from a girl, aged 5½ years, who had had jaundice for five weeks. At first the liver was enlarged and then gradually got smaller, till it could no longer be felt. The urine contained bile pigment and acetone, but no albumen, leucin, or tyrosin. Delirium set in and death took place. Post mortem the liver weighed 1¼ lb., was pale yellow and very friable. On section it showed yellow areas, between which were small red spots. The gall-bladder and ducts were normal. Microscopically there was general staining with bile pigment, the cells were distended with fat, but the nuclei were well marked. There was no distension of the bile-ducts and no actual necrosis of the cells. No micro-organisms were found in the specimens.

Suprarenal Hæmorrhage in an Infant.—Dr. E. B. GUNSON showed specimens from a case of suprarenal hæmorrhage in an infant. The child was first seen on the sixth day after birth. There was a slight discharge from the umbilicus, the cord having separated. On the eighth day the temperature rose suddenly to 102° F., and cellulitis of the forearms developed. The stools became frequent, loose, and offensive. The child was collapsed and died on the ninth day, thirty hours after the onset of symptoms.

Post mortem the right suprarenal was greatly enlarged, and on section was found to have been converted into an almost black hæmorrhagic pulp. The left suprarenal was similarly affected, but to a less extent. A culture from the heart's blood gave a pure growth of the streptococcus; a Gram-stained perforation of the left suprarenal showed the presence of streptococci both in the cortex and medulla.

Purpura complicating Diphtheria.—Dr. E. B. GUNSON also showed a photograph of this condition in a girl, aged 10 years. The purpura appeared at the site of an antitoxin rash and persisted till death. Before death the purpuric patches on the cheeks and ears became confluent. Superficial ulceration occurred, but there was very little loss of substance. Hæmorrhages occurred into the gums, and an extensive subconjunctival hæmorrhage appeared in the right eye.

There was old-standing constipation, the stools resulting from the administration of castor oil and turpentine being very copious and markedly offensive for many days.

Palatal palsy, carditis with "cardiac paralysis," arthritis, and albuminuria developed before death on the twenty-eighth day.

Teratoma of Pharynx.—Dr. F. J. POYNTON and Mr. T. T. HIGGINS showed specimens illustrating a persistent pharyngeal rudiment in an infant, aged 5 months. Some difficulty in swallowing, associated with coughing and occasional dyspnœa, had been noticed for five weeks. A pearly white, rounded, polypoid tumour was discovered in the pharynx, and under anæsthesia was found to spring from the left supratonsillar fossa, to which it was attached by a narrow fibrous stalk. After removal it was found to contain a narrow band of cartilage, embedded in fibrous connective tissue, and covered by perfectly formed skin.

Abstracts from Current Literature.

Medicine.

Organic acids in the urine of infants (*'Monatsschr. f. Kinderheilk.,'* 1914, XII, *p.* 645).—**H. Aron** and **Marianne Franz** consider the lowest members of the fatty acid series (formic, acetic, and butyric acids) and oxalic acid, and as a result of their experiments they find that only very small quantities of volatile fatty acids are excreted in the urine of infants, that food rich in fat does not affect the quantity of the acids, and in acute disturbances of nutrition the quantity of volatile acids is not increased in the urine. As regards oxalic acid, they found that with a mixed diet (mother's milk, cow's milk, or cow's milk and sugar) free from oxalic acid, the urine almost invariably contained small quantities of oxalic acid which did not arise either in the bowel (result of fermentation) or from intermediate metabolism (endogenous oxalic acid formation). The quantity of oxalic acid in the urine was somewhat higher with the administration of cane or grape sugar than with a pure milk diet. Barley meal increased the excretion of uric acid markedly. There was no increase of uric acid excretion in the urine in acute disturbances of nutrition. F. R. B. ATKINSON.

The presence of lactic acid in the urine in cyclic vomiting (*'Am. Journ. Dis. Child.,'* 1914, VIII, *p.* 127).—**F. P. Underhill** and **H. M. Steele** record a case of cyclic vomiting in a boy, aged 2½ years, from whose urine more than ·56 grm. of zinc lactate was isolated in the twenty-four hours. No lactic acid was found in the urine in the intervals between the attacks. Diacetic acid, acetone, and protein were also present, gradually disappearing as the attacks passed off. The significance of lactic acid in the urine is obscure. J. D. ROLLESTON.

Some experiments in connection with orthostatic albuminuria (*'Practitioner,'* 1914, XCIII, *p.* 113).—**F. D. Nicholson** examined the urines of 189 boys in Framlingham College on two different dates, and found 28 per cent. had albuminuria. The tests were made at 7 a.m. after dressing, 10 a.m. after breakfast, 3.30 p.m. after football, at 10.30 a.m. and at 3 p.m. after a three-mile run. Seven per cent. showed albumin after getting up, 10·7 per cent. after football, and 18 per cent. after the run. The urines of forty-two boys were examined just before and after a plunge in the swimming bath. Four passed albumin at both times, whilst in three the test was positive only after the swim. F. R. B. ATKINSON.

Acute nephritis in infancy from disturbances of nutrition (*'Arch. f. Kinderheilk.,'* 1914, LXXIII, *p.* 202).—**F. Frank** records fourteen cases in children, aged from 1 to 11 months. His conclusions are as follows: (1) Acute nephritis is not frequent in infancy. (2) It is pre-eminently of an exudative nature and frequently has an hæmorrhagic character, which is to be attributed to the excessive permeability of the blood-vessels in the first year of life. (3) Ætiologically all kinds of infections play a part and especially disturbances of nutrition. (4) Among the varieties of nephritis associated with disturbances of nutrition the ascending form must be assigned a special significance, since the lower urinary passages are frequently involved in infantile digestive disturbances. J. D. ROLLESTON.

Mild forms of chronic infantile nephritis (*' Gazz. med. ital.,'* 1914, LXV, *p.* 77).—**V. Stavsky** draws attention to chronic intermittent albuminuria in childhood, the patients presenting no symptoms except perhaps slight anæmia, headache, and puffiness of the face. The condition is allied to that described by Heubner under the name of *pædonephritis levis.* A characteristic of the affection is the occurrence from time to time of slight hæmorrhages almost always in connection with mild acute infective diseases of other organs, especially the tonsils. As regards ætiology, it is interesting to notice that it occurs almost exclusively in late childhood. In Heubner's thirteen cases there was only one, a girl, aged 3 years, all the others were more than six years old, and seven of them were ten to twelve years old. The female sex predominated, there being nine girls and four boys. From a diagnostic point of view it must be borne in mind that the true nature of the complaint may be marked by manifestations of anæmia, and on this point two cases reported by the author are particularly instructive. One was a boy, aged 10 years, who, after an attack of scarlet fever three months previously, continued in feeble health, complaining of headache, nausea, and anorexia. No organic disease could be found except that the urine contained albumin (0·5 per mil.), hyaline casts, and white corpuscles. Subsequent examination proved the albumin to be permanent, oscillating from 0·5 to 0·8 per mil. This was the only case known to the author where a mild nephritis became transformed into a severe form. If these cases of nephritis may get completely well, it must be recognised that treatment has little effect; the administration of arsenic, however, should be avoided; the author considers it has a deleterious action on the kidneys, and it should never be given in cases of anæmia without ascertaining first that a mild form of chronic nephritis is not present. VINCENT DICKINSON.

Pyelitis in infancy and childhood ('*Boston Med. and Surg. Journ.*,' 1914, CLXX, *p.* 540).—**E. T. Wyman** analyses a series of sixty-five cases at the Boston Children's Hospital. Fifty-four per cent. were in infants under two years, and 46 per cent. in older children. Sixty-three per cent. of the infants were females, and 90 per cent. of the children were females. Chills occurred in 15 per cent., dysuria in 36 per cent., frequent micturition in 40 per cent., vomiting in 39 per cent. The leucocyte count varied from 8000 in a chronic case to 62,000 in a very acute case; average of all uncomplicated cases 19,000. The organism responsible was the colon bacillus in a large proportion of the cases; streptococci, staphylococci, and pneumococci were sometimes found. REGINALD MILLER.

Bacillus coli infections in infants and early life ('*Med. Record*,' 1914, LXXXVI, *p.* 288).—**W. M. Hartshorn** records two cases of protracted *Bacillus coli* pyelitis in a female, aged 20 months, and a male, aged 6 months. The latter had slight stiffness of the neck and tendency to opisthotonos, followed by a condition of tetany which lasted two months. Lumbar puncture was negative. Treatment consisted in the administration of large doses of potassium citrate and the guarded use of urotropin in increasing doses. Vaccines were tried in one case, but were followed by an aggravation of the symptoms. J. D. ROLLESTON.

Circumcision in the masturbation of female infants ('*Am. Journ. Dis. Child.*,' 1914, VIII, *p.* 144).—**R. J. Freeman**, after alluding to Rachford's paper on masturbation in infants (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1907, IV, *p.* 510), states that the habit is due to the irritation caused in nervous children by adhesions between the clitoris and the surrounding tissue. The only curative treatment consists in separation of the adhesions and circumcision. Six illustrative cases are recorded.

J. D. ROLLESTON.

Vulvo-vaginitis in children ('*Arch. de Méd. des Enf.*,' 1914, XVII, *p.* 209).—**J. Comby** refers to a series of cases of vulvo-vaginitis which he published in 1891. This series comprised 152 cases, varying in age from three weeks to fifteen years, but only two cases occurred under two years of age. One of the chief causes was over-crowding among the poorer classes. Contagion is usually accidental, rarely venereal, according to Comby. Many women, incapable of transmitting gonorrhœa to their husbands, have vaginal discharges which are contagious to children. Contagion, then, takes place from one child to another, directly or indirectly. Acute contagious vulvo-vaginitis must be distinguished from aphthous and impetiginous vulvitis, from anæmic leucorrhœa, and from traumatic or irritative vulvitis due to onanism, oxyurides, etc. All these are non-specific and easily curable. Most cases of vulvo-vaginitis are gonococcal. In eighty-three cases observed by Spaulding, gonococci were found in fifty-six. Relapses are common, apart from re-infection; hence treatment should be continued some time after the discharge has ceased. The duration of this affection is indefinite and may be several years. Complications include urethritis, stomatitis, cystitis, proctitis, purulent ophthalmia, arthritis, and peritonitis. According to Comby gonococcal peritonitis in little girls is not grave, and he mentions eight cases which recovered without operation. Epstein and others, however, have reported cases which were fatal, with or without laparotomy. Other observers have reported purulent salpingitis, and some think that vulvo-vaginitis may lead to malformations of the uterus, dysmenorrhœa, or even sterility, and that certain cases of suppurative salpingitis of doubtful origin in virgins may be due to gonococcal infection dating from infancy. As regards treatment, Comby reports favourable results from vaccines, the vaginal discharge having ceased in ten cases after two to four injections made every three or four days. C. F. Marshall.

The treatment of gonococcus vulvo-vaginitis, with further observations on the value of the complement fixation test in the management of this disease (*'Am. Journ. Dis. Child.,'* 1914, vii, *p.* 230). —**Gilbert Smith** takes a more optimistic view of the curability of vulvo-vaginitis, and, from the evidence of the complement fixation test, concludes that the majority of cases are cured by efficient treatment. A negative reaction indicates a cure, but a weakly positive reaction does not indicate that the disease is still present, for it may be due to a "group reaction," in which the gonococcus antigen combines with antibodies of allied micrococci. As regards local treatment the author recommends vaginal irrigation with warm solutions of boric acid, sodium bicarbonate, or permanganate of potassium (1 in 8000 to 1 in 6000), followed by injection of about half a drachm of argyrol 10–20 per cent., or protargol 5 per cent., twice daily. In chronic cases irrigation with 1 in 1000 silver nitrate and application of tincture of iodine to the cervix through an endoscope tube. For urethritis he uses injection of about half a drachm of 5 per cent. argyrol. He considers that vaccines are of little use in gonorrhœa of mucous membranes. Local treatment should be continued for a month after symptoms have subsided.

C. F. Marshall.

Diabetes in early infancy (*'Johns Hopkins Hosp. Bull.,'* 1913, xxiv, *p.* 274).—**J. H. M. Knox (Jun.)** says that out of 6496 deaths occurring among diabetics only eight were under one year. A case is then quoted of diabetes in a breast-fed infant girl of healthy parentage, aged 9 months. The child was passing urine with 4 to 8 per cent. of glucose shortly after admission. Acetone became greatly increased, and within a week unconsciousness developed, and death took place eleven days after admission. At the autopsy there were patches of broncho-pneumonia in both lungs. Macroscopically there were no other very marked changes. Microscopically the islands of Langerhans in the pancreas were diminished in size and number, and the thyroid showed some evidence of increased functional activity by the misshapen acini. The case was characterised by insidious onset but rapid progress, and symptoms only existing for three weeks, rapid loss of weight amounting to 2 lb. in five days, and the absence of greatly increased thirst or hunger. The author then analyses sixteen cases in detail. He finds the disease, though rare in infancy, is becoming more frequent; the sexes are equally affected in infancy, while in after-life males show a striking preponderance. In three the disease was recognised a few days after birth, in thirteen several months elapsed before a diagnosis was made. In two accidents were assigned as the cause, in six injury to the central nervous system was the ætiological factor, and in two injury during delivery may have been a predisposing circumstance. In a few instances, diabetes followed the daily ingestion of huge amounts of sugar. The chief symptoms in the sixteen cases were first restlessness, followed by increased thirst, hunger, and the passage of a large amount of urine. Loss of weight was a marked symptom. Three cases ended in coma. Thirteen of the sixteen died, and three apparently recovered, but the first two of the latter were mild. The severer cases died in three weeks, one survived for two years, and others survived several months. Urinary findings are naturally incomplete. In only one of the sixteen was the amount accurately measured, and here 680 c.c. were passed in twenty-four hours. The sugar varied in quantity from 1 to 10 per cent.; albumin was never present in any considerable amount. Attention was often directed to the condition by the stiffness of the napkins after drying and in one by the swarms of flies. The specific gravity varied from 1010 to 1036. Glycosuria occurs in gastro-intestinal disorders and in eczema. One of the sixteen was successfully treated on a diet consisting of the curd from a litre of milk and 100 grm. of cream suspended in 900 grm. of oatmeal. The cream was gradually increased to 300 grm. when sugar reappeared in the urine to the amount of 4 to 8 per cent. in 600 or 700 c.c. of urine. Oatmeal gruel, a little bouillon, and a green vegetable were then added to the milk mixture, with the result that the sugar tolerance was increased up to 16 grm. a day. On this diet there was no loss of body-weight, and at the close of the report the infant was doing well.

CHRISTOPHER ROLLESTON.

Three cases of diabetes mellitus in one family (*'Arch. of Ped.,'* 1914, XXXI, *p.* 764).—**C. G. Moore.**—The father, aged 40 years, a son, aged 19 years, and a daughter, aged 7 years, were affected within five months. In all the illness started suddenly with fever. The son died of coma within three months. The author tried autotherapy with the girl, as he had known cases of icterus irresponsive to all medicinal treatment clear up very soon when they were given their own urine to drink. The girl was therefore given 3 oz. of her own urine thrice daily, the colour and taste being masked. The percentage of sugar dropped, and there was some improvement in the general condition, but the treatment was not continued, and the child got worse. The issue is not recorded. J. D. ROLLESTON.

Death during lumbar puncture (*'La Pediatria,'* 1914, XXII, *p.* 286).—**F. Fonzo** records a case of cerebro-spinal meningitis in a child, aged 8 months, where death occurred from paralysis of the respiratory centres during lumbar puncture. The pulse remained almost normal during the syncopal attacks, while the respiration became progressively feeble till it stopped. The author thinks that in order to facilitate the entrance of the trochar the child was held with its head strongly flexed forward and that the sudden movement thus made, given the existing equilibrium of pressure between the spinal space and the cerebral space, by the failure of the communication between the ventricular fluid and the sub-arachnoid spaces of the spinal cord, there was a displacement of the liquid mass forwards, thus causing a hyperæmia *ex vacuo* in the bulbar region. VINCENT DICKINSON.

Typhoid cerebro-spinal meningitis in a newborn infant (*'Le Nourrisson,'* 1914, II, *p.* 211).—**M. Garnier** and **Havelacque.**—A male infant, aged 3 weeks, presented meningeal symptoms, and lumbar puncture performed two days after the onset showed the presence of purulent meningitis. The disease ran a slow course characterised by moderate and irregular fever, repeated convulsions, disturbance of respiratory rhythm, and towards the end by generalised rigidity and opisthotonos. A week before death hæmatemesis and melæna occurred. Death took place on the fortieth day. The spinal meningitis was then cured, lumbar puncture giving issue to a normal fluid before death. Post mortem the spinal meninges and cord showed no lesion, the inflammation being confined to the brain, especially the ventricles, which contained pus. There was no trace of old or recent ulceration in the intestines. Bacteriological examination of the cerebro-spinal fluid showed typhoid bacilli. The source of infection could not be discovered, as the child had been exclusively breast-fed by the mother, who had not had typhoid fever. J. D. Rolleston.

Pneumococcic meningitis and meningismus (*'Arch. of Ped.,'* 1914, xxxi, *p.* 323).—**F. Huber** records four cases of pneumonia in children, aged from 1 to 11 years, who showed cerebral symptoms with coma. The cerebro-spinal fluid was clear, under high tension, and sterile. All recovered. Huber regards the so-called "meningismus" as due to meningitis or encephalitis, which may only be visible microscopically and not be found on naked eye examination. Cases of meningismus which recover may subsequently develop mental defects. J. D. Rolleston.

Acute Malta fever meningitis (*'Policlínica,'* 1914, ii, *p.* 813).—**J. A. Jordán.**—A boy, aged 2½ years, developed a form of an irregular type accompanied by slight and transient arthralgia. As he was living in an intensely malarial district he was subjected to an energetic treatment with quinine, but without effect. A month after the onset of the disease an agglutination test and blood culture were made and proved positive for the *Micrococcus melitensis*, and completely negative for typhoid and paratyphoid bacilli, *B. coli*, and the malarial parasite. An autogenous vaccine was used containing 5, 10, 15, 20 and 25 millions to one cubic centimetre, but no improvement resulted, and signs of meningitis developed. Lumbar puncture gave issue to clear fluid under hypertension showing numerous *Micrococci melitenses*. Intraspinal injection of anti-Malta fever serum was unsuccessful, and death occurred three weeks after the onset of the disease.

J. D. Rolleston.

Incomplete cerebro-spinal meningitis (*'Monde Méd.,'* 1914, xxiv, *p.* 129).—**A. Netter,** as a result of his observations, believes—(1) That the classic and characteristic symptoms of meningitis are often transitory and only noticed by the patient's friends. (2) When any sign is present at any time, especially if persistent fever exists with oscillations, lumbar puncture should be performed. (3) The fluid collected is not always purulent or sero-purulent, but may be clear, and should always be examined by the microscope. F. R. B. Atkinson.

Refractory or so-called "fast" cases of meningococcus meningitis (*'Am. Journ. Dis. Child.,'* 1914, viii, *p.* 307).—**H. Heiman** records two cases in children, aged 6 and 7½ years. Both came from the same neighbourhood, were infected at about the same time, and failed to react to repeated injections of antimeningitis serum. Recovery eventually took place, in one fifty-eight days after admission to hospital, and in the other after an illness of nearly sixteen weeks. J. D. Rolleston.

Influenzal meningitis (*'Med. Journ. of Austral.,'* 1914, I, *p.* 415).—**A. H. Tebbutt** describes a fatal case in a child, aged 8 months. The organism found resembled the Pfeiffer's bacillus. F. R. B. ATKINSON.

A fatal case of meningitis associated with an influenza-like bacillus (*'Med. Journ. of Austral.,'* 1914, I, *p.* 421).—**E. Atkinson** describes this case occurring in a child, aged 3 years and 10 months.

F. R. B. ATKINSON.

Influenzal meningitis (*'Am. Journ. Obst.,'* 1913, LXVII, *p.* 1031).—**T. S. D. Grasty.**—Pfohl in 1892 reported three cases of meningitis due to the Pfeiffer's bacillus. In 1903 Mya reported that this organism produced a rapidly fatal meningitis, either by a general infection or by the sinus being caused from a diseased joint, naso-pharynx, lung, or ear. Infants are affected in 60 per cent. of the cases and males more frequently than females. The average duration varies from five to twenty-six days. The lesions found post mortem resemble those of pneumococcic or meningococcic infection. The cerebro-spinal fluid is in most cases turbid and its lesion increased. The position of the cerebral lesions varies with the point of entry. In the cord the lesions follow the course of the vessels. In influenzal meningitis the leucocyte count is low, rarely exceeding 15,000, in marked contrast to other infections, where the numbers vary from 25,000 to 40,000. Kernig's and Babinski's signs are present, but the diagnosis can only be made by lumbar puncture and the subsequent recovery in pure culture of the bacillus. The following are possible complications: encephalitis, optic neuritis, epidural abscess, myelitis, poliomyelitis, and hemiplegia. The prognosis is grave, the mortality being about 85 per cent. CHRISTOPHER ROLLESTON.

Tuberculous meningitis complicated by influenzal meningitis (*'Am. Journ. Dis. Child.,'* 1914, VIII, *p.* 150).—**H. K. Faber** records a case in a male infant, aged 5 months, admitted to hospital for convulsions. The cerebro-spinal fluid was clear, under normal pressure, and showed 145 cells per c.mm., 92 per cent. of which were lymphocytes. No organisms were found in the smear. A second lumbar puncture made next day showed a similar fluid, but a smear showed a number of organisms morphologically identical with *B. influenzæ*, and a blood culture taken at the same time showed a profuse growth of *Staphylococcus albus* and *B. influenzæ*. Three days later a choroid tubercle was found in the left fundus, and tubercle bacilli were found in the cerebro-spinal fluid. The symptoms differed from those of uncomplicated tuberculous meningitis by the almost continual clonic convulsions, and a long continued intermittent type of temperature. Death took place sixteen days after admission. The necropsy showed glandular pulmonary and generalised tuberculosis. In the brain there were two distinct processes: (1) The pia was everywhere studded with miliary tubercles, and there was a fibrino-purulent exudate at the base. (2) An abundant greyish-yellow purulent exudate over the convexity of the left hemisphere, a smear from which showed *B. influenzæ* only. Reference is made to Hemenway's case (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1908, V, *p.* 39), in which the spinal fluid was clear before death, but post mortem a purulent exudate on the parietal lobe was found, from which the pneumococcus was cultivated. J. D. ROLLESTON.

Meningococcal meningitis and Koch's bacilli (*'Arch de Méd. des Enf.,'* 1914, XVII, *p.* 591).—**Loubet, Auban,** and **Riser.**—A boy, aged

9 years, who had had an anal fistula for the last five years, developed symptoms of cerebro-spinal meningitis. The cerebro-spinal fluid was turbid, and showed an excess of polymorphs and meningococci. The presence of a fistula prompted a search for tubercle bacilli, which were found in the blood and in the cerebro-spinal fluid after homogenisation. In the last lumbar puncture pneumococci were also present. No autopsy.

J. D. Rolleston.

Tuberculous and meningococcal or parameningococcal meningitis in a child (*'Gaz. hebd. des Sci. méd. de Bordeaux,'* 1914, xxxv, *p.* 135).—**E. Dubourg.**—A boy, aged 8 years, who had been suffering from tracheo-bronchial adenopathy, gradually developed symptoms of meningitis. Lumbar puncture gave issue to a clear fluid containing 90·21 per cent. lymphocytes and 8·83 per cent. polynuclear neutrophils, and showing the co-existence of tubercle bacilli and a diplococcus not staining by Gram. The child left the hospital and died shortly afterwards, before the identity of the cocci could be determined by another lumbar puncture. J. D. Rolleston.

Internal pachymeningitis in young children (*'New York Med. Journ.,'* 1914, xcix, *p.* 720).—**A. Gordon.**—This may be traumatic or due to other causes such as syphilis, tuberculosis, rickets, or scurvy, and occasionally acute specifics. Some say hæmorrhage occurs first and inflammation afterwards, but probably the inflammation is the primary lesion. It occurs chiefly over the convexity of the brain. It develops insidiously with hydrocephalus, increased reflexes, spasticity of the limbs and sometimes convulsions, strabismus, vomiting, and high tension of the cerebro-spinal fluid. There may be retinal hæmorrhages. Gordon relates a case in a male child, aged 13 months, who had convulsions when six months old and again at 9 months. The child was semiconscious, with spastic arms and legs and increased reflexes, internal strabismus, and marked retinal hæmorrhages. Temperature 101° to 105° F., oscillating daily. Wassermann's reaction was negative in the blood serum and cerebro-spinal fluid; the latter was under high pressure and showed slight lymphocytosis but no organisms. Craniotomy was performed; a large cyst filled with cerebro-spinal fluid was found over the right motor area and emptied. The operation only relieved the symptoms for three weeks, they then returned and in spite of repeated lumbar punctures the child died six weeks later. Post mortem, a blood-clot was found on the inner surface of the dura. The second case was in a boy, aged 5 months, who for a year had similar symptoms to the other case. The cerebro-spinal fluid was negative but under great pressure. The boy died from convulsions. The autopsy showed thickened dura mater with much excess of serous fluid. Gordon considers the state of the cerebro-spinal fluid an important element in the diagnosis.

J. Porter Parkinson.

A hitherto undescribed form of chronic meningitis in children (*'La Pediatria,'* 1914, xxii, *p.* 181).—**A. Jovane** gives details of three cases. The ætiology is obscure; the presence of tobacco, lead, alcohol, tubercle, syphilis, and malaria, as well as hereditary neuropathy, being negatived. The disease commences with tremor in one limb, after twenty-four to forty-eight hours spreading to the others, the head, tongue, and trunk. In the first few days the temperature is raised, but this often escaped the notice of the parents. There is no interference with functions of any organs, no vomiting or convulsions. The essence of the disease is tremor with muscular hypertonies, followed by contractures of varying degree. The tremor is characterised by irregular oscillations, usually frequent and fine, 120 to 160 a minute. It is accentuated by intentional movement, in crying and other emotional states, diminishes and sometimes disappears during sleep. Owing to the association of the tremor and hypertonus, the patient assumes a characteristic physiognomy, especially when the motor disturbance invades the whole body. The head is in continuous oscillatory movement and more or less dragged backwards from the retraction of the nuchal muscles. The buccal aperture is usually open, and through it can be seen the oscillating tongue. The voice is quavering and bleating like a goat's. The trunk in less marked cases is little affected, but in severe forms presents a curve backwards, a true opisthotonos which is sometimes lateral according as the spinal muscles are equally contracted or the contrary. The tremor, however, is communicated to the whole of the trunk. The upper extremities have a characteristic attitude. The arm is drawn away from the trunk, the forearm is flexed on the arm so that the back of the wrist rests on the chest and is rotated outward. The hand itself is prone, the thumb pressed on to the index finger, which is usually in semi-flexion, while the last three fingers are strongly flexed on the palm. The lower limbs are nearly always flexed, the feet in equinus position, the toes in plantar flexion. There is considerable resistance in the adductors. The tremor in the lower limbs is much less than in the upper. The reflexes, superficial and deep, are all exaggerated. Clonus and the signs of Trousseau and Babinski are absent. The electrical excitability of the nerves is increased. Lumbar puncture gives a very clear liquid under increased pressure; the centrifugalised deposit is scanty and contains a few leucocytes with occasional prevalence of polynuclears. The cases usually recover after many months or even a year. Treatment consists in baths daily at a temperature of 34° C., iodine internally, and repeated lumbar puncture. This paper, which was communicated to the Congresso Pediatrico at Bologna in 1913, well repays perusal.

VINCENT DICKINSON.

Reviews.

THE HEART IN EARLY LIFE. By G. A. SUTHERLAND, M.D., F.R.C.P. Oxford Medical Publications. London: Henry Frowde and Hodder and Stoughton. 1914. Price 6s. net.

IF all medical text-books were as easy and pleasant to read as this one, publishers would have no use for their customary appeals to "the busy practitioner" to examine their wares. In a small space, Dr. Sutherland has given us a vast deal of information, but so skilfully has he besprinkled his text with examples and with aphorisms that the reader performs the task of mental digestion without conscious effort. After a brief introduction he gives an account of the functional cardiac disturbances of childhood, laying especial stress on the "sinus" type of arrhythmia and the importance of the respiratory movements as a factor in its production. He also has much to say about the inorganic murmurs of childhood. In both of these subjects he insists on the fallacy of regarding as important a single symptom unsupported by other evidences of organic heart disease, remarking that a "murmur should not be treated like a hot-house plant." After a brief section devoted to paroxysmal tachycardia—a borderland between functional disturbance and organic disease—he gives an account of the organic cardiac lesions encountered in pædiatric practice. Throughout this section he insists on the paramount importance of rheumatic infection as a cause of the acquired lesions. He takes the broader view of this infection, accepting the type of disease encountered as strong evidence of its rheumatic origin, even in the absence of a history of rheumatism or chorea. He emphasises the fact that all parts of the heart are usually injured by the infection, and that the essential function of the heart is that of muscular contraction. The importance of rheumatic lesions, according to this teaching, lies in the degree to which they cripple the muscular functions, and particularly in respect to the left ventricle. In regard to treatment he gives much practical advice, such as should commend the book to many readers. It is a relief to find that so cautious and experienced an observer retains some confidence in the value of the salicylates in acute rheumatic carditis. Congenital malformations are not dealt with systematically, and this is the only criticism we have to offer, that his readers would be glad if Dr. Sutherland, in future editions, could give them the benefit of his experience in this direction also. A word must be added about Dr. Sutherland's attitude towards the newer graphic methods. He is enthusiastic as to their value and interest, but without being hypnotised into regarding them as anything more than means to an end. Throughout his book he insists on the importance of looking at heart disease from every point of view, and gaining thereby such accurate views as alone can lead to successful diagnosis, prognosis, and treatment. In conclusion, the book avoids technicalities, and no one interested in clinical medicine will find it hard to read. C. C.

ZUR PROGNOSE UND ÆTIOLOGIE DER KINDER-HYSTERIE. Von Dr. A. TOBIAS. Berlin: S. Karger, 1913. Price 3·50m.

DR. TOBIAS has set herself to find out what was the subsequent history of the children under fourteen who had passed through Feer's clinic in Heidelberg with the diagnosis of hysteria during the years 1885-1903. After excluding several cases for various grounds there were left thirty for investigation. She was able to see nineteen of the former patients and for the rest had to be content with replies to written questions, but of the thirty there were twenty-one cases of pure hysteria; the others were epileptics or hysteria complicating various physical disorders. A short account of each case and the later history is given, but of the twenty-one cases Tobias claims that sixteen have been permanently cured. Admitting with the author that the figures are too small for any sweeping judgment, and further that the histories, whether obtained in writing or in person, are somewhat unreliable, the results are certainly more hopeful than are usually entertained with the hysteria of children. On the other hand, although the subsequent histories have been obtained after menstruation in the girls, most of the former patients were still in adolescence or, at all events, had not undertaken any position of independence or responsibility, *e. g.* of the girls only one is married. Nevertheless, the writer justifies her conclusion that the French school is unnecessarily pessimistic. Under favourable conditions a large number of cases of hysteria in childhood, even with a recognisable psychopathic basis can be permanently cured. M. D. E.

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Original Articles.

THE OCULO-CARDIAC REFLEX.

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The oculo-cardiac reflex is a reflex change in pulse-rate, associated in some cases with a change in rhythm following ocular compression. The path of the reflex is considered to be along the fifth cranial nerve, the medulla, and the vagus or the sympathetic nerves. Usually marked slowing of the pulse results; the path of the reflex in these cases is by the vagus, and such persons are described as vagotonics. Rarely, the slowing is very slight or an actual increase in pulse-rate results; the path of the reflex in these cases is by the sympathetic, and such persons are described as sympathicotonics.

Summary of the Literature.

Aschner (1) first described the reflex in 1908.

Miloslavitch (7) in 1910 stated that the reflex was exceptional in the normal man but habitual in vagotonics. He pointed out that the reflex was frequent in alcoholism and nervous dyspepsia.

Gautrelet (3) described a marked slowing of the pulse-rate in cases of Graves' disease, and tabulated cases illustrating the results of ocular compression in a variety of diseases. In pulmonary affections, in rheumatism, and in alcoholism slowing of the pulse was invariably produced.

Petzetakis (9), as the result of the examination of seventy-five normal persons of all ages, states that ocular pressure produces habitually in the normal subject a variable degree of slowing, averaging five to twelve beats per minute. Pressure on the right eye produces a more marked degree of slowing than pressure on the left eye. In vagotonics greater slowing results. In sympathicotonics there is less slowing or actual quickening of the pulse-rate. The reflex is abolished gradually by atropin in from twenty to thirty minutes.

Petzetakis (10) has also recorded the production of varying grades of heart-block, including a prolonged *a—c* interval, dropped beats, and complete dissociation of auricles and ventricles.

Aviragnet, Dorlencourt, and Bouttier (2), investigating twenty-six cases of diphtheria, found slowing of the pulse in eleven cases, and abolition of the reflex in fifteen cases, at certain stages of the disease. They claim that the reflex may be of value in differentiating cardiac failure due to myocardial lesions from that due to nerve lesions.

Monier-Vinard and Meaux-Saint-Marc (8) state that in scarlet fever a very marked slowing results, the pulse-rate being frequently halved. The slowing was absent or very slight during the eruptive period, commenced to show itself with the phase of bradycardia, and was greatest at the time of convalescence.

Lesieur, Vernet, and Petzetakis (5) have described the state of the reflex in nervous diseases and claim that it has diagnostic value.

Guillain and Dubois (4), writing of the reflex in cases of pseudobulbar paralysis, state that the exact physiological conditions of the reflex are imprecise and that it is not possible to specify the nerve tracts whose integrity is necessary for the reflex.

Present Observations.

The present paper is based upon consecutive observations made with the polygraph in cases of diphtheria and scarlet fever occurring in children under twelve years of age. Observations in cases of acute rheumatism, under the care of Dr. James Mackenzie at the London Hospital, were interrupted by the outbreak of war. In them similar results of ocular compression were obtained, and changes in rate and rhythm, similar to those described below, were in these cases confirmed by the electro-cardiograph.

Method of procedure and the general effects produced by ocular compression.—The patients were all examined in bed. A preliminary tracing was taken in order to establish a uniform pulse-rate and to obviate, as much as possible, the increase in pulse-rate set up by agitation.

Pressure on the right eye was then exercised by the thumb, through the closed upper lid. The amount of pressure used was the maximum that could be exerted without causing the patient pain. The pressure was kept up for half a minute in the majority of cases, and the pulse-rates were calculated over this period. In cases where sufficient pressure could be exerted suddenly the effect was immediate; in cases where the pressure had gradually to be increased the change was more gradual.

Effects upon the pulse.—The change in pulse-rate, usually a definite degree of slowing, lasted for the whole of the period during which pressure was exercised. In a few cases, in which the pressure was repeatedly exerted for periods of one and two minutes during a space of fifteen to twenty minutes, the reflex was not abolished. It was found in each case that the degree of slowing of the pulse obtained was proportionate to the amount of pressure. The amount of pressure permitted by different patients varied considerably, so that the comparative results are of limited value.

Changes of rhythm and conduction resulted almost exclusively in children who tolerated considerable discomfort, and were associated always with marked slowing of the pulse.

Coincident effects.—In a few cases the respiratory rate was slowed. In these cases the longest pulse-beats usually occurred during expiration, but the relationship was inconstant. In cases where the pulse was stopped for periods of three and four seconds sighing respirations developed. No other symptoms of distress or discomfort were ever noticed.

The urine was not examined. The occurrence of albuminuria, glycosuria, and polyuria have, however, been described as the result of ocular compression.(6)

DETAILS OF THE RESULTS OF OCULAR COMPRESSION.

(*a*) In cases of diphtheria; (*b*) in cases of scarlet fever.

(*a*) Fifty cases of diphtheria, in which the diagnosis was confirmed bacteriologically, were investigated.

Effect on the pulse-rate.—The pulse-rate remained unchanged in two cases and was increased in nine cases, the average increase being five beats per minute. Of the cases in which an increase in pulse-rate occurred five presented no abnormal physical signs, but were highly nervous children. The four remaining cases presented the syndrome known as "cardiac paralysis." In one of these cases the increase in pulse-rate persisted for several days when the observations were discontinued, the condition of "cardiac paralysis" persisting till death. In two cases the increase in rate persisted till death. The only case which recovered gave a reduction in pulse-rate as soon as the cardiac condition had returned to normal. Some details of this case are as follows :

Boy, aged 9 years. Severe Faucial Diphtheria, "Cardiac Paralysis." Recovery.

Day of disease.	State of the heart.	Per minute.		Changes in rhythm and conduction.
		Pulse-rate before o.c.	Pulse-rate during o.c.	
18th	"Cardiac paralysis"	110	118	—
26th	"Cardiac paralysis"	105	112	—
38th	Normal . . .	82	64	Pauses for periods up to $2\frac{2}{5}$ secs. Frequent premature contractions. $c + a$ sequences.
83rd	Normal . . .	88	68	

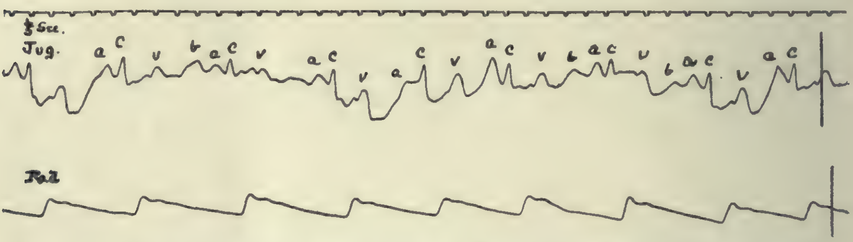

FIG. 1.—Boy, aged 6 years, mild attack of diphtheria ; 26th day of disease. Normal tracing. Rate 63 per min. a–c interval less than $\frac{1}{5}$ sec. Sinus arrhythmia.

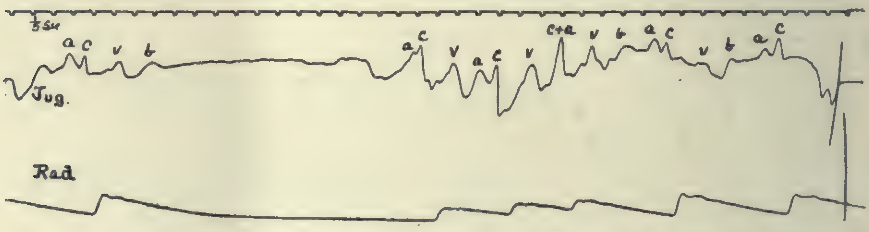

FIG. 2.—From the same patient, and taken immediately after Fig. 1, while pressure was exerted on the right eye. Shows: *a*. Marked slowing, with stoppage of the heart for $3\frac{1}{5}$ sec. *b*. Reduction in the a–c interval; that for the beat following the long pause may be attributed to "escape" of the ventricle. *c*. $c + a$ sequence; this may be due to a premature ventricular or to an atrio-ventricular premature contraction.

Constant retention in pulse-rate occurred in thirty-nine cases.

Pauses of three and four seconds' duration were recorded, and in some cases the pulse-rate was almost halved (see Figs. 2 and 4). The average reduction in pulse-rate was seventeen beats per minute, but the largest number of cases occurred in the group indicating a reduction of six to ten beats per minute.

Table of 39 *Cases of Diphtheria, showing Reduction in Pulse-rate.*

Reduction in pulse-rate in beats per minute.	1–5	6–10	11–15	16-20	21–25	26–30	31–35	36–40
Number of cases .	6	11	4	4	2	5	5	2

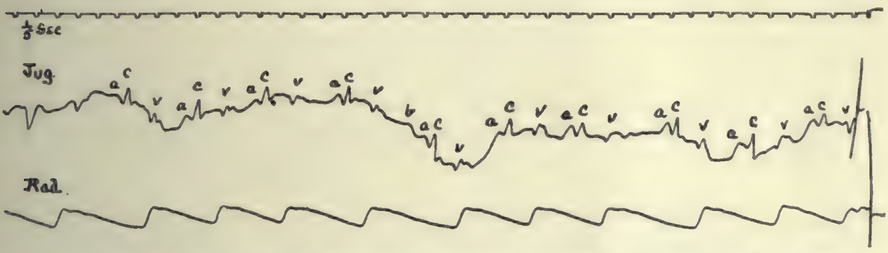
1/5 sec
Jug.
a c v a c v a c v a c v b a c v a c v a c v a c v a c v a c v
Rad.

FIG. 3.—Boy, aged 3½ years, moderately severe attack of diphtheria; 23rd day of disease. Normal tracing. Rate 78 per min. a–c interval less than $\frac{1}{5}$ sec. Sinus arrhythmia.

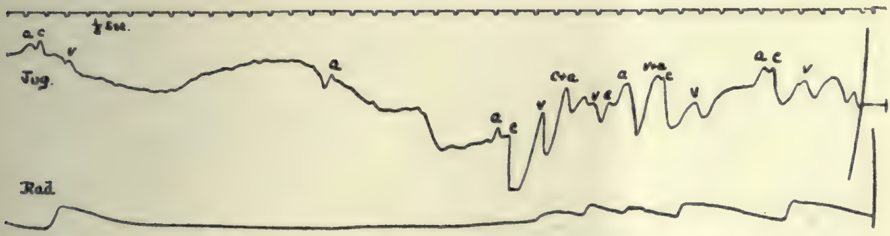

FIG. 4.—From the same patient, and taken immediately after Fig. 3, while pressure was exerted on the right eye. Shows: *a*. Stoppage of ventricles for $4\frac{3}{5}$ sec. *b*. Dissociation of auricles and ventricles. *c*. Three premature contractions, both *a* and *c* being premature. The first is probably a premature ventricular contraction, the second an example of retrograde stimulation of auricle, the third an atrio-ventricular premature contraction.

Effect on conduction and rhythm.—The following changes occurred:

(1) Premature contraction either appeared for the first time or became more frequent in ten cases (see Fig. 4).

(2) Reduction of the a–c interval, in thirteen cases (see Fig. 2).

(3) $a+c$ sequences in seven cases; this change may be attributed

in some cases to escape of the ventricle, in others the rhythm is probably atrio-ventricular (see Fig. 2).

(4) *c–a* sequence, in one case, the *c–a* interval being about $\frac{1}{10}$ sec. (see Fig. 4).

(5) Complete dissociation of auricles and ventricles, apparently, in two cases (see Fig. 4).

Influence of pyrexia, the nature of the attack, and the pulse-rate on the reflex.—During pyrexia slowing of the pulse was less marked, but usually present.

In toxic cases slowing of the pulse was slight or absent; increase in rate was not recorded.

In severe, non-toxic cases the reflex was abolished during the persistence of "cardiac paralysis."

In moderately severe and mild cases the reflex was apparently uninfluenced by the degree of severity, apart from the associated pyrexia.

The state of the reflex bore a very variable relationship to the pulse-rate. The reflex was most marked, however, with pulse-rates between 60 and 80 per minute.

(*b*) Twenty-five moderately severe and mild cases of scarlet fever were investigated.

Effect on the pulse-rate.—The pulse-rate was slightly increased or remained unchanged in three cases, all of which were highly nervous children.

During the eruptive period and the persistence of pyrexia, the majority of cases showed a reduction equal to about one half of that obtained during the apyrexial period; a small number, however, showed no reduction; while in one case the reduction was more marked during pyrexia than subsequently, as is illustrated by the accompanying table:

Male, aged 4 years, suffering from a Mild Attack of Scarlet Fever.

Day of disease.	Rash.	Temperature.	Per minute.		Reduction in pulse-rate.
			Pulse-rate before o.c.	Pulse-rate during o.c.	
3rd	+	100° F.	128	70	58
11th	–	98° F.	108	72	36

During the apyrexial period and after the rash had faded, twenty-two cases in which the reflex was positive gave an average reduction of seventeen beats per minute, a figure exactly comparable with that of the diphtheria cases; likewise the largest number of cases appears in the group indicating a reduction of six to ten beats per minute.

Table of 22 Cases of Scarlet Fever, showing Reduction in Pulse-rate.

Reduction of pulse-rate in beats per minute.	1–5	6–10	11–15	16–20	21–25	26–30	31–35	36–40	41–45
Number of cases .	1	7	4	4	1	2	1	1	1

Effect on conduction and rhythm.—The changes produced in conduction and rhythm were similar to those produced in diphtheria, but were less marked. Premature contractions were less frequently induced. Dissociation of auricles and ventricles was not met with.

SIGNIFICANCE OF THE OCULO-CARDIAC REFLEX.

The oculo-cardiac reflex affords a means of acting upon the nervous mechanism of the heart in such a way as to produce all the changes in rate, rhythm, and conduction which follow vagus pressure in the neck (11).

When vagus effects are obtained, the reflex is regarded as positive, and is an indication of a normal state of the nervous mechanism of the heart. The reflex may be positive when myocardial degeneration is present and is therefore not an index of the state of the myocardium. A sympathetic effect may also be obtained by ocular compression. In these circumstances the reflex is regarded as negative. Such a negative result was obtained in all cases of diphtheria which exhibited the state of so-called "cardiac paralysis." The reflex arc, upon the integrity of which the oculo-cardiac is dependent, is too imprecise to enable definite conclusions to be drawn from the state of the reflex in all cases. Having regard, however, to the pathological findings in diphtheria and the clinical picture afforded by cases of "cardiac paralysis," the sympathicotonic effect obtained by ocular pressure in this state is most satisfactorily explained by a "transitory perturbation" of the controlling centre in the medulla, similar to the change affecting the pyramidal tract in diphtheria and other acute infections, and manifested by the presence of Babinski's sign (12).

SUMMARY.

(1) The oculo-cardiac reflex is a reflex change in the rate of the heart, associated in some cases with a change in rhythm, following

ocular compression. The path of the reflex is considered to be along the fifth cranial nerve, the medulla, and the vagus or sympathetic.

(2) The reflex affords a simple means, under certain conditions, of acting upon the nervous mechanism of the heart in such a way as to produce all the changes in rate, rhythm, and conduction which follow vagus pressure in the neck. Under other conditions results analogous to those induced by stimulation of the sympathetic are obtained.

(3) The reflex is positive when slowing of the pulse occurs and negative when either no slowing or actual quickening results. Persons exhibiting the former state are described as vagotonics, those exhibiting the latter as sympathicotonics.

(4) The reflex is positive in normal persons.

(5) The reflex is positive in about 92 per cent. of children convalescent from diphtheria and scarlet fever. In about 8 per cent. the reflex is negative; these children are of a naturally nervous disposition. In some of the patients the reflex was negative during pyrexia.

In cases of so-called "cardiac paralysis" the reflex was negative and remained so till death, in fatal cases. In cases which recovered the reflex became positive when the heart returned to the normal state.

(6) In cases of diphtheria and scarlet fever in which the reflex was positive the following results were obtained:

(*a*) Slowing of the whole pulse, with stoppage of the heart in some cases for as long as four seconds.

(*b*) Production of premature contractions in cases in which they were previously absent and an increase in the incidence of the premature contractions when they were previously present.

(*c*) Reduction of the a–c interval.

(*d*) Production of $c + a$ beats, due in some cases possibly to escape of the ventricle, in other cases presumably to the inception of atrio-ventricular rhythm.

(*e*) (In diphtheria patients only.) Complete dissociation of auricles and ventricles.

(7) The claim that the oculo-cardiac reflex is of diagnostic value in differentiating cardiac failure due to myocardial lesions from that due to nervous lesions presumes the independence of the muscular and nervous functions of the heart and cannot be upheld.

(8) The oculo-cardiac reflex is of slight diagnostic value in confirming the nervous origin of the great majority of the post-febrile bradycardias and in differentiating them from cases of auriculo-

ventricular heart block. As sinus arrhythmia, however, is present in nearly all cases of bradycardia due to the former cause, such confirmation is rarely necessary.

I am indebted to my former colleague, Dr. J. D. Rolleston, of the Grove Hospital, for calling my attention to the reflex and for supplying me with most of the references.

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A CASE OF CEREBELLAR ABSCESS IN CHILD, NOT ARISING FROM EAR TROUBLE.

By Hugh T. Ashby, B.A., M.D.Cantab., M.R.C.P.Lond.,

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The following case is of interest, not only on account of the comparative rarity of cerebellar abscess in children, but also on account of the difficulty of the diagnosis.

The patient was a girl, aged 4 years, brought to the Manchester Children's Hospital in December, 1914, complaining of headache which had been noticed for some five weeks previously. Beyond this nothing abnormal had been observed by the parents. On admission to hospital she complained of severe headache, seemed very listless, and would not take any notice of things around her. She lay on the right side, which she continued to do throughout her illness. There was some slight bronchitis, and the pulse was slow and irregular. The knee-jerks were sluggish on both sides, no Kernig's sign was present, but there was marked optic neuritis in both eyes. The tache cérébrale was well marked throughout the illness. The cerebro-spinal fluid was drawn off on two occasions, but was not under pressure and consisted of clear fluid with a slight excess of lymphocytes and polymorphonuclears. The urine was normal, and there had never been any ear discharge. The temperature was normal and kept so throughout the illness, till she died five weeks later.

A diagnosis of tuberculous meningitis was made, although there were points against this, such as the almost normal cerebro-spinal fluid and the normal temperature. During the course of the illness in hospital (five weeks) she remained in the same listless condition, although she brightened up at times, as frequently happens in tuberculous meningitis.

After a few days vomiting became a more prominent symptom, and for the last three to four weeks of life she vomited on an average two or three times each day. Constipation also became more marked. Kernig's sign was present on some days and absent on others, but the knee-jerks remained sluggish throughout. The pupils reacted to light and were always equal, but the optic neuritis became slowly worse.

After five weeks in hospital she had a convulsion, mostly affecting the right side, and died.

Post mortem.—The brain was of normal consistence, the ventricles were not distended, and there was a large abscess in the substance of the right cerebellum. The ears were normal, as was the rest of the body. The pus from the abscess was creamy and contained pneumococci.

The interest of this case lies in the diagnosis, which was most difficult in the absence of any ear discharge or disease. The diagnosis of tuberculous meningitis became more doubtful as the case progressed, and it became more like a cerebral tumour of some kind, but the presence of an abscess, which might possibly have been drained, was never thought of. The question is, what was the origin of the abscess, for there was no ear disease, which is by far the commonest cause of cerebral abscess. She had a transient bronchitis on admission, and in the absence of any other cause this may have been the starting point. There had been a slight vaginal discharge, but the pus from this was not examined, and it is not likely that the discharge contained pneumococci. On looking up the literature on the subject it appears that these cases do not have any marked rise of temperature, and the temperature of this case never rose above normal during her stay in hospital.

There were but few localising signs during life, except the continual tendency to lie on the right side, and the almost right-sided convulsion. There was no nystagmus or tendency to fall to one side more than the other.

A CASE OF LIVER ABSCESS IN AN INFANT.

By C. Violet Turner, M.B.,
House Physician, Queen's Hospital for Children.

A male child, aged 5 weeks, was admitted to the Queen's Hospital for Children on November the 24th, 1914, on account of swelling of the abdomen and legs. The mother stated that the child was quite healthy at birth; when four days old he became jaundiced, and remained so for ten days. The umbilical cord separated at the end of a fortnight, and the scar was said to have healed a week later; six days before admission, however, a spot of discharge was seen on the binder. The abdomen was prominent from birth, but increased very rapidly in size five days before admission. The feet and legs had been swollen for three days. There had been no gastro-intestinal disturbance and no symptoms beyond constant screaming. The child was breast-fed from birth.

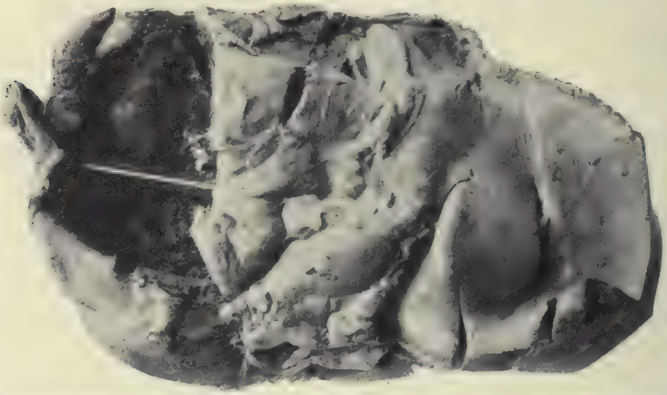
On admission the temperature was subnormal and the child vigorous. The abdomen was greatly distended, especially in the right flank, and the superficial veins of the abdominal wall were dilated. There was œdema of both legs, of the scrotum and penis, and of the lower part of the abdominal wall and back. The edge of the liver could be felt at the level of the umbilicus, and there was apparently great enlargement of the right lobe; the surface felt smooth and regular. There was no ascites, and the abdomen, except over the liver, was resonant. Physical examination showed no other abnormality.

The night after admission the temperature rose to 101° F.; the child continued to be breast-fed and did not vomit. Next morning his general condition appeared serious. The distension and œdema had increased, and the skin at various places over the abdomen and legs had become deep purple and begun to blister. The scrotum was ulcerated and the penis sloughing. The baby died soon after midday, twenty-four hours after admission.

At the post-mortem examination there was some recent plastic peritonitis but no free fluid.

The right lobe of the liver was much enlarged and slightly adherent to the abdominal wall. It contained a large abscess filled with about two ounces of thick creamy pus. The abscess was single and had a thick wall; it was shut off by fibrous tissue from the surrounding part of the liver. The rest of the liver showed cloudy swelling but no other change. There was no naked eye evidence of sepsis having tracked from the umbilicus or from the appendix. All the other organs of the abdomen and thorax were healthy.

Sections made from various parts of the liver showed that the abscess had a thick fibrous wall which contained a few chains of streptococci. In many places the vessels were plugged with emboli of streptococci, but the tissue round these emboli showed no inflammatory reaction, and there were no other actual abscesses. Cultures from the pus and heart's blood grew a *Colon bacillus* in addition to the streptococcus.



The liver from the visceral surface, with a rod placed across the abscess cavity.

Solitary liver abscess in an infant appears to be excessively rare; very few recorded cases are to be found in the literature of the last ten years. H. D. Rolleston (5), in 1913, described a case of a baby, aged 7½ months, in which a single abscess, the size of a pigeon's egg, was found post mortem, in the right lobe of the liver, together with broncho-pneumonia at the base of the right lung. The infection was streptococcal. Niblock (3) records a case in India of a baby, aged 11 months, with a history of diarrhœa, in which the pus from the liver was typical of a tropical abscess. Acuña (1) found a single liver abscess in the right lobe of the liver of a child, aged 2½ years, following an attack of gastro-enteritis; the cultures from the pus were sterile, and no organisms were found in direct films.

It is probable that the abscess in the present case was due to a streptococcal infection spreading from the umbilicus to the liver. Although there was no obvious sign that this was the source of infection, it is significant that the cord did not separate for two weeks, and that a spot of discharge from the umbilicus was seen within a week of death. Williams (6) states that Keller, in 1904, believed that 20 per cent. of all deaths in the first few weeks of life were due to umbilical sepsis; there is often no outward sign of infection, but examination of the intra-abdominal part of the umbilical vessels shows that they are filled with purulent thrombi. Pflaundler and Schlossmann (4) state that the infection may spread by Wharton's jelly, which is the more frequent and benign way, or by an arteritis or phlebitis; and add that it is important to know that infection of the umbilical vessels can, and in most instances does, exist without any visible change in the umbilicus itself. The interest of this case, if the umbilical source of sepsis be accepted, is the prolonged delay in the determination of the abscess and the late fatal termination, the more common sequence of events being the formation of multiple abscesses followed by death within the first three weeks of life, as in Enrico Mensi's (2) case.

I am indebted to Dr. Eric Pritchard for kindly allowing me to publish the case.

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RETROSPECT OF OTOLOGY, 1914.

By MACLEOD YEARSLEY, F.R.C.S.,
Senior Surgeon to the Royal Ear Hospital, etc.

IN the department of *Anatomy and Physiology,* two papers must be mentioned; one by Sturm ('Journ. of Laryngol.,' xxix, 193), in which he advances a new theory of hearing and states that the ligamentum spirale contains muscle fibres and tightens the basilar membrane; and one by Shambaugh ('Annals of Otology,' xxiii, 111), on the semicircular canals and the function of equilibrium.

As usual, the literature of *Suppurative Otitis Media* and its complications is the most bulky. The most useful papers may be selected as follows: "Danger Signals in Suppuration of the Middle Ear," by Kisch ('Clinical Journ.,' xliii, 311), and "Otorrhœa," by Whale ('Practitioner,' 1914, ii, 368). An interesting case of probable injury to the jugular bulb following myringotomy in an infant, aged 10 months, is related by Page ('Annals of Otology,' xxiii, 161). In *Mastoid* surgery, Lake ('Clin. Journ.,' xliii, 705) deals with acute suppuration and its treatment, and McCaw ('N. Y. State Journal of Medicine,' xiv, 414) urges the need of more accurate knowledge in the diagnosis of mastoiditis by the general practitioner. Two interesting instances of a rare injury, parotid fistula following the mastoid operation, in a boy, aged 4 years, and a girl, aged 9 years, are recorded by Canesteo ('Annals of Otology,' xxiii, 148) and Hammond ('Boston Med. and Surg. Journ.,' clxxii, 25).

Of other *Complications*, Imperatori ('Archives of Pediatrics,' xxxi, 766) describes a case of otitic meningitis due to *Streptococcus capsulatus* in a boy, aged 7 years, and Steel ('Annals of Otology,' xxiii, 416) one of meningitis without definite symptoms, occurring late in mastoidectomy convalescence in a boy, aged 8 years. In the latter case, diagnosis was reached by the laboratory findings, clinical symptoms of meningitis appearing late. An instance of temporosphenoidal abscess, secondary to chronic suppurative otitis media in a boy was recorded by Ingersoll ('Cleveland Medical Journ.,' xiii, 482), and one of cerebellar abscess, in which ventricular distension was well shown in a boy, aged 13 years, by Perkins ('Annals of Otology,' xxiii, 413).

Papers dealing with non-suppurative otitis media are sparse. Beck ('Annals of Otology,' xxiii, 153) published the curious case of a girl, aged 11 years, who showed the *signe de fistule* in non-suppurative ear disease, whilst Wood discussed the naso-pharynx in oto-rhinology in a useful paper ('Practitioner,' 1914, i, 760).

In the subject of *School Hygiene and Deaf-mutism*, Grace Burton had some very welcome and sensible words to say on the deaf child and his education ('Cleveland Med. Journ.,' xiii, 123), whilst in "Child Study" (vii, 144) Macleod Yearsley dealt with the important subject of the classification of the deaf child for educational purposes. The same author has endeavoured to throw further light on the problems of consanguinity in deaf-birth by his paper ('Lancet,' 1914, i, 167).

The most healthy sign in 1914 has been a further growth of literature on the important subject of *Prevention*. Such papers as that of Bryant ('Amer. Journ. of Med. Sci.,' cxlviii, 61) on the involution of the naso-pharynx and its clinical importance, of Holmes ('Annals of Otology,' xxiii, 138) on the epipharynx in children, and of Wishard ('Cleveland Med. Journ.,' xiii, 66) on the conservation of hearing, show the way in which otological thought is gradually tending. The prevention of deafness is attacked directly by Macleod Yearsley ('Eugenics Review,' vi, 116) in his article on the problem of deafness and its prevention, and indirectly by Black ('Journ. Amer. Med. Assoc.,' lxiii, 2126) in his remarks on prophylactic vaccination against epidemic meningitis.

Philadelphia Pediatric Society.

December the 8th, 1914, W. N. BRADLEY, M.D., President.

Progressive Muscular Atrophy.—Dr. R. L. ENGLE showed a girl, aged 13 years, with progressive muscular atrophy of the Aran-Duchenne type. Illness began seven years ago, following whooping cough. Over a period of six months there developed stiffness in the left leg, lameness and indefinite pain. The finer movements of the hands became awkward and clumsy. Three years later contractures of the hands and right foot were first observed. The condition had not progressed since, but for the past year she had complained of general weakness and poor appetite. There had been no other symptoms. She showed marked emaciation, exaggerated supra- and infra-clavicular fossæ, active abdominal reflexes, diminished deep reflexes of upper extremities, active knee-jerks, and diminished right tendo Achillis reflex. All cranial nerves were intact; no sensory disturbances. On both hands there was marked atrophy of the smaller muscles, of the flexors and extensors of the forearm, arm, and the shoulder. There was similar atrophy of the leg and foot muscles, but those of the thigh were best preserved. Muscular twitchings were only visible after irritation. There was marked weakness of the muscles of the extremities, the patient, to rise from the floor, turning over on hands and knees, and climbing up on herself. Electrical examination showed partial reaction of degeneration.

Newer Views on the Subject of Tonsils and Adenoids.

The Relations of the Tonsils to Tuberculosis.—Dr. H. R. M. LANDIS said that, in dealing with children, it was important to remember that we had to do with an age period in which all lymphoid tissue was in excess as judged by adult standards. This was true of all lymph nodes throughout the body. Failure to recognise this fact had led some observers to base a diagnosis of tuberculosis on palpable cervical lymph nodes alone. Had they examined other groups of superficial lymph nodes, the same enlargement would have been noted. Dr. Landis found superficial lymph nodes readily palpable in all children between two and twelve years, irrespective of social condition. By adolescence, lymph nodes were only palpable as the result of local or general disease. The tonsils were subject to the same evolution. Simple hypertrophy of the tonsil was no good reason for its removal.

In regard to the relationship between tonsils and tuberculosis, we had three factors to consider: (1) The *rôle* played by the tonsil as a portal of entry, (2) primary tuberculosis of the tonsil, and (3) secondary tuberculosis of the tonsil.

(1) To establish the first fact was far from easy. While occasionally tubercle bacilli passed through the tonsils and set up tuberculosis of the cervical lymph nodes, tuberculosis of the nodes was not always produced in this way. Inflammatory swelling of the cervical nodes might arise from eczema, carious teeth, and other processes of other structures within the buccal and pharyngeal cavities. Thus, the source of infection of the cervical lymph nodes was multiple and not single. Besides, tuberculosis was manifest in a severe form and at an earlier age in the bronchial lymph nodes than in the cervical. Granting that the tonsil might afford an easy means of entrance for the tubercle bacillus, its removal did not entirely free the child from danger, inasmuch as there still remained much lymphoid tissue which was drained by the cervical lymphatic system. Many tonsillotomies were partial, and the portion left might still be vulnerable for the tubercle bacillus, just as it was for organisms producing acute inflammation.

(2) As the result of microscopic examination of tonsils, primary tuberculosis was said to occur in about 5 per cent. of cases in which the tonsil was hypertrophied. In the majority of instances this was an accidental finding. Primary localisation in the tonsil was not common, as borne out by inoculation experiments, which proved that tubercle bacilli might pass through the tonsil without causing damage and infect the lymph nodes.

(3) By far the commonest form of tuberculosis of the tonsil occurred secondarily to advanced pulmonary and laryngeal lesions. It might manifest itself as extensive ulceration of the tonsil itself with extension to the pillars, uvula, and adjoining parts. In most advanced cases, the tonsils showed no visible change, but if examined microscopically, the great majority showed tuberculous changes. In these cases the tonsils were subjected to an overwhelming infection, and the resistance of the individuals had been tremendously reduced.

The question how the tubercle bacillus gained access to the lungs remained shrouded in mystery. The tendency was now again towards the inhalation theory. Dr. Landis admitted that the tonsils might be one of the portals of entry but was not willing to grant that they played this *rôle* except in a very small percentage of cases. Nor did he believe that removal of the tonsils in children with a tuberculous parentage or children in the so-called pre-tuberculous stage was indicated, unless the tonsil was obviously and unmistakably diseased.

Infection through the Tonsils.—Dr. G. B. Wood, by invitation, read this paper. He said that the question of tonsillar infection was yet in such an unsettled state that in a large number of cases, the operation of removal of the faucial and pharyngeal tonsils was done with the hope that the patient would be benefited, but without absolute knowledge that the tonsils were the cause of general infection. Because of the impossibility to determine absolutely whether the tonsil was at fault, a cry of horror has been raised at the "massacre of the tonsils." They had accumulated sufficient experimental and clinical data to make a plausible appeal for their contentions. Henke, a recent defender of the tonsils, had published in the 'Archiv f. Laryngologie u. Rhinologie,' for 1914, his results of a series of cases. He had injected pigment into the nasal mucosa and gums of animals and human beings and found a certain amount of it in their tonsils. He deduced from this that the tonsillar tissues of the throat had the function of eliminating toxins from the general lymphatic system. In a later number of the Archiv appeared a paper by Amersbach, who carried out a similar series of experiments, but with more careful attention to his technique. His results were absolutely opposed to those of Henke, and controverted the theory that the tonsils were organs of elimination. This accords with our previous knowledge. The facts which lead us to believe that the tonsils are at times a source of cryptogenic infection, were: (1) the anatomy of the epithelium was such that we had a lessened barrier, as far as mechanical defence was concerned. From the beginning there was a peculiar disintegration of the basal cells of the cryptal epithelium, causing distinct lessening in its continuity and the absence of a basement membrane and subepithelial layer of connective tissue. (2) The clinical study of a large number of cases of tonsillitis and its relation to general infection had demonstrated that certain organisms attacked first the tonsils and might later be found in the blood and other organs; also that in some chronic cases of general toxæmia the condition cleared up rapidly after the removal of the tonsils. (3) The pathologic study of acute tonsillitis showed that the attack was first against the epithelium of the crypts. The ordinary pyogenic organisms gained entrance to the parenchyma of the tonsil, producing typical symptoms of acute suppurative tonsillitis only after the feeble barrier of the cryptal epithelium had been destroyed. (4) It had been shown experimentally that in the tonsils of the hog the tubercle bacilli would pass unaltered through the epithelium of the crypts and enter the interfollicular tissues and be taken up by the efferent lymphatics and carried to the regionary lymph nodes before damage to the tonsillar tissues had taken place. Further that while infection of the tonsillar tissues of the hog was extremely easy, a simultaneous infection of other portions of the mucosa of the mouth and pharynx practically never happened. Dr. Wood believed that we were justified in drawing the conclusion that the tonsillar structure of the throat was more easily penetrated by bacteria than were other portions of the mucous membrane of the upper respiratory tract.

The Indications for the Removal of Tonsils and Adenoids.—Dr. F. R. Packard pointed out that the indications for removal of the tonsils differed from the indications for removal of adenoid growths in the naso-pharynx. He detailed the different indications for each, pointing out that Meyer's original article describing naso-pharyngeal adenoid growths practically covered all the indications for their removal. In regard to the indications for removing tonsils, formerly hypertrophy was regarded as the sole indication; but at present, their *rôle* as portals of infection had led to more operations being indicated on that account than for any other single indication. He referred briefly to the infections following disease of the faucial tonsils. There were practically no contra-indications to removal of the tonsils, aside from the dangers attached to the operative procedure employed.

The Relation of the Lymphoid Tissue of the Upper Air-passages to the Voice.—Dr. G. H. MAKUEN, by invitation, read this paper. While the lymphoid tissue of the upper respiratory tract resembled that found elsewhere, there were marked structural differences in the distinctive portions of the tissue itself. It was always present in close approximation to some of the most important vocal organs. This tissue varied during the life of the individual, and physiological conditions were often mistaken for pathological and treated accordingly. Voice, a vehicle for expressing thought and feeling, was essential to psychological as well as physiological development. The lymphoid tissue of the upper respiratory tract might affect the voice in three ways, through its action as a lubricant to the pharynx, through its influence upon the action of the muscles employed in phonation, and through its effect upon the resonance chambers of the voice. Normal lymphoid tissue lubricated the pharynx, while abnormal lymphoid tissue either failed to lubricate or lubricated it too much. The muscles chiefly influenced were the palatopharyngei, palatoglossi and superior constrictor muscles, and all the resonance chambers of the voice were affected by it. Large adenoids and tonsils interfered with the development of the facial bones and the alveolar arches, and by their effect on respiration and phonation also interfered with the development of the pharyngeal, laryngeal, and thoracic cavities, materially altering the size, shape, and contents of all the resonance chambers of the voice. Degenerated tonsils injured the voice by causing congestion and hypertrophy of adjacent membranes and muscles, interfering with normal action. Lymphatic tissue prejudicial to the voice was also prejudicial to the general health of the individual and there was a dual reason, therefore, for trying to restore it to normal. From the vocalist's standpoint, operative measures were always a misfortune, because a tonsil requiring operation was always hypertrophied or degenerated, either condition being deleterious to the voice; and it was doubtful whether after any operation the tonsils were ever normal. While the chief reason for operating was to conserve the individual's general health, it was no less important to conserve or improve the patient's voice. Every child should be regarded as a possible singer and the conservation and development of its vocal organs must always be carefully considered. In childhood the voice was easily injured as the vocal organs were growing and developing. Congestion of the pharynx or acute tonsillitis was not enough reason to remove the tonsil; for the cause might be in some remote part of the body. The less radical the operation, the less liability would there be of injury to the voice. Hence the desirability of conservatism. Normal lymphoid tissue was beneficial to the voice; but abnormal lymphoid tissue harmed the voice. Operative measures which were beneficial to the general health might be decidedly injurious to the voice. An extra-capsular tonsillectomised pharynx was always a damaged pharynx and the operation should only be done when the damage to the pharynx and to the individual threatened to become greater by leaving it undone.

Abstracts from Current Literature.

Medicine.

The incidence of tuberculosis in childhood (*'Journn. State Med.,'* 1914, XXII, *p.* 705).—**G. Sims Woodhead** discusses bovine tuberculosis in relation to tuberculosis in the child. He thinks that although milk is not the main carrier of the tubercle bacillus to the human subject, it still must account for a fair percentage of the cases of tuberculosis that occur amongst children, and probably for a certain but smaller percentage of adult cases. In his opinion bovine tuberculosis may account for but a proportion of the cases of tuberculosis that find their way into the Registrar-General's returns, but it must be seriously studied and carefully reckoned with, in that it attacks children during their period of development and growth, interfering, both directly and indirectly, with their nutrition, killing some of them and protecting a few perhaps, but rendering others more susceptible to infection by the human bacillus. There appears to be little or no danger of our minimizing the importance of the action of the human bacillus, at present, at any rate; but unless the knowledge already acquired concerning the bovine bacillus is widely diffused, there is, undoubtedly, a serious danger that the importance of this organism, as an agent in the production of tuberculosis, may be minimized, and, in certain quarters, overlooked.

J. ALLAN.

The incidence of tuberculosis in childhood (*'Journ. State Med.,'* 1915, XXIII, *p.* 1).—**A. P. Mitchell** recently carried out a bacteriological study of tuberculosis of the lymph-glands in children, from which he thinks the following conclusions justified. (1) The results of inoculation with autopsy material, on account of the small number of cases investigated, cannot be considered conclusive as to the relative frequency of the bovine and human types of infection. But, so far as they go, they furnish evidence that in cases of fatal tuberculosis in children the human bacillus is the main contributor to the mortality rate. (2) Having demonstrated that a considerable proportion of the tuberculosis affecting children in Edinburgh and district is of bovine origin, more particularly that which affects primarily the mesenteric and cervical glands; that the milk supply of the same areas is frequently infected with bovine tubercle bacilli; and having demonstrated that a certain number of deaths occur from this bacillus, he is of opinion that bovine tuberculosis can no longer be considered a negligible factor in respect to the spread of tuberculosis amongst children, more especially since unsterilized cow's milk in Scotland is a vehicle by which tubercle bacilli must very frequently be introduced into the bodies of children. In short, he maintains that the campaign against tuberculosis must include the bovine sources. (3) It is to be hoped that the high degree of tuberculosis contamination which he has found in the Edinburgh milk supply may prove an effective argument for those who are striving with our legislators in the cause of pure milk. J. ALLAN.

The incidence of pulmonary tuberculosis in children (*'Liverpool Med.-Chir. Journ.,'* 1914, XXXIV, *p.* 333).—**S. W. M'Lellan** considers that the various specific methods for distinguishing active and passive disease are unreliable, that tubercular infection in children is very frequent, but active disease not so common; disease of the lungs is secondary to disease of the thoracic glands, and is very fatal; mere enlargement of these glands is no proof they are tubercular, and fibroid pneumonic and bronchiectatic conditions are frequently mistaken for phthisis, and are more common in children than is generally supposed. F. R. B. ATKINSON.

Early pulmonary tuberculosis in childhood (*'Brit. Journ. of Tuberculosis,'* 1915, IX, *p.* 1).—**K. Fraser** has analysed 300 cases of pulmonary tuberculosis in children in the elementary schools in Cumberland, and comes to the following conclusions. (1) The commencement of school life has a prejudicial effect on children predisposed to pulmonary tuberculosis. (2) Inadequate increase of weight is very conspicuous. (3) Defective nutrition is probably the earliest indication of a tuberculous infection. (4) Night sweating is only significant when the sweats are heavy. (5) A persistent hard dry cough is the most conspicuous type of cough. (6) In nearly every case one or other apex is affected, and the right apex is most often the first recognisable focus. (7) Dulness is almost always present over the affected lung. (8) Inequality of the breath-sounds is a very early indication of trouble; the duration of this is short, and it is usually succeeded by bronchial breathing. (9) Friction and fine crepitations are the most significant accompaniments, and all accompaniments when persistent, and especially if localised, are suspicious. (10) Spontaneous improvement is more common in girls than boys; from the sixth year the tendency to spontaneous improvement increases year by year. Children in rural areas show a very much greater tendency to spontaneous improvement than children in urban areas. F. R. B. ATKINSON.

Tuberculosis in children (*'Brit. Journ. Tuberculosis,'* 1914, VIII, *p.* 151).—**E. Carling** rightly draws attention to the necessity of educational advantages existing in a sanatorium for children, and sees no objection to the presence of adults and children in one sanatorium.

F. R. B. ATKINSON.

Tuberculosis in children (*'Boston Med. and Surg. Journ.,'* 1914, CLXXI, *p.* 454).—**R. N. Smith** considers that D'Espine's sign, viz. extension of whispered bronchophony, is not a reliable sign of enlarged bronchial glands unless it be extended to the second thoracic vertebra. The paper otherwise covers old ground. F. R. B. ATKINSON.

Tuberculous infection in young children, with special reference to its occurrence in cases of malnutrition (*'Journ. State Med.,'* 1915, XXIII, *p.* 21).—**W. A. B. Young** made an inquiry into this subject, and the methods of investigation included (1) clinical observations; (2) post-mortem examinations; (3) examinations of post-mortem material in the laboratory. Among 113 cases of malnutrition under clinical observation in whom no ordinary clinical evidence of tuberculosis could be discovered, 31 gave a skin-reaction to tuberculin, 77 did not react, and in 5 cases the results were doubtful. No child under three months gave a reaction, only one under six months, and among 93 under two years 19 reacted. These were all children in whom there was no sign, symptom, nor history of tuberculosis. Of 40 cases examined post-mortem, 27 were cases of children dying of malnutrition, diagnosed as such clinically. Tuberculosis was found in 4 cases—or 14·8 per cent.—all under $1\frac{7}{12}$ years of age. From a morbid anatomy point of view there was no case of latent infection amongst these 27 cases, and in each of the four cases tuberculosis was the cause of death. Two cases of concealed tuberculous infection were found among these 40 cases.

J. Allan.

The diagnosis of tuberculosis in early life (*'Am. Journ. Med. Sci.,'* 1914, cxlviii, *p.* 530).—**H. R. M. Landis** and **I. Kauffmann** consider the chronic form of pulmonary tuberculosis only, and lay stress on the difficulty in diagnosis, as the symptoms and signs present in adults are apt to be absent in children. Exaggeration of the breath-sounds is constant in children, and gives rise to the puerile form of breathing. They do not believe in the alleged percussion changes as a sign of enlarged bronchial glands. Von Pirquet's test is valuable under two years of age, but the older the child the more unreliable the test. The sociological conditions of each child should be considered and endeavour should be made to determine whether he is physiologically normal as far as his surroundings are concerned.

F. R. B. Atkinson.

Diagnosis and treatment of tuberculosis in children (*'Boston Med. and Surg. Journ.,'* 1914, clxxi, *p.* 452).—**W. C. Bailey** recommends the following procedure for distinguishing between infection and disease. Inquire carefully as to the presence of an infecting case in a family; then try von Pirquet's test, and, if positive, make a physical examination. If active disease be found, treat in a sanatorium or special out-door school. If the test be negative with a history of contact, keep the child on the list of suspects, if possible place him in an out-door school and repeat the test at intervals. If there be a negative history of contact and negative examination, but a positive von Pirquet, the procedure should be the same as above.

F. R. B. Atkinson.

Röntgen ray in tuberculosis of children (*'Boston Med. and Surg. Journ.,'* 1914, clxxi, *p.* 453).—**W. J. Dodd** does not think a definite diagnosis should be made by this means until positive clinical evidence is obtained.

F. R. B. Atkinson.

Report on the infection of children with the bovine tubercle bacillus (*'Brit. Med. Journ.,'* 1914, i, *p.* 125).—**A. P. Mitchell. Report on tuberculous milk in Edinburgh** (*Ibid.*, ii, *p.* 71).—**A. P. Mitchell. A bacteriological study of tuberculosis of the lymph glands in children** (*'Edin. Med. Journ.,'* 1914, xiii, *p.* 209).—**A. P. Mitchell.**—These three papers may be considered together. An examination of seventy-two cases of tuberculous cervical glands in children showed that 90 per cent. were due to bovine tubercle bacilli in cow's milk, the obvious precaution being therefore to sterilize the milk. The faucial tonsils were found in fifty-one out of the seventy-two cases to be first affected with tubercle, and these infected the glands. In the milk supply of Edinburgh tubercle bacilli were found in 20 per cent. of the samples examined. The last paper brings the number of cases to eighty, the bovine bacillus was present in seventy-one instances (88 per cent.) and the human bacillus in nine (12 per cent.).

F. R. B. Atkinson.

The milk supply as a causal factor in relation to tuberculosis (*'Journ. State Med.,'* 1914, xxii, *pp.* 671 and 718).—**Sheridan Delépine** gives a general account of the observations and arguments which have been used for and against the view that the milk supply bears a causal relation to tuberculosis. The matter is reviewed under the following heads—(1) General remarks and early experimental evidence; (2) evidence based upon age incidence, distribution of lesions, and history of cases; (3) evidence based upon the pathogenic activity, the cultural characters, and the properties of the bacilli isolated from tuberculous lesions; (4) evidence based upon the effects which a reduction in the amount of tuberculous milk supplied to a community has upon the infantile mortality from tuberculosis. It is concluded that although there is not complete agreement in the results obtained by various observers as to the exact amount of human tuberculosis attributable to the consumption of tuberculous cows' milk, there is clear and cumulative evidence that cows' milk plays a very important part in the production of infantile tuberculosis in England and Scotland.

J. Allan.

The relation of bovine tuberculosis to early tuberculosis in children (*'Am. Journ. Dis. Child.,'* 1914, viii, *p.* 210).—**T. C. McCleave** considers that milk brought to just below the boiling-point will never transmit bovine tuberculosis, and that all milk should be pasteurised.

F. R. B. Atkinson.

The absorption of fat from the intestinal tract of the actively tuberculous child (*'Am. Journ. Dis. Child.,'* 1914, viii, *p.* 235).—**F. W. Schlutz** finds as a result of the examination of fifteen cases that fat-absorption in most of the common forms of tuberculosis is practically normal, and is likely to be diminished early in cases with extensive glandular and lymphatic involvement. The presence of the exudative condition does not influence fat-absorption. A diet which insures the largest amount of fat-deposit in the tissue, with the least detention of water, is the one most beneficial to the tuberculous child. F. R. B. Atkinson.

Tuberculosis of the bronchial glands and lung hilus (*'Amer. Journ. Med. Sci.,'* 1914, cxlviii, *p.* 369).—**H. F. Stoll** and **A. C. Heublein** record illustrative cases and arrive at the following conclusions: (1) Prior to the fifteenth year tuberculosis of the bronchial glands and lung hilus is the commonest form of tuberculous disease. (2) The early symptoms are usually indefinite and chiefly of toxic origin. Cough is generally present, but may be entirely absent, even with advanced disease of the bronchial glands. (3) Although the orthodox signs of incipient apical tuberculosis are not present in these cases, certain physical signs indicate a pathological process at the lung root. (4) The significant signs are a "hilus dimple" (noted anteriorly, over the hilus region at the end of inspiration), dilated veins, parasternal and paravertebral dulness, and, most significant of all, a well-marked, whispered bronchophony in the interscapular region (D'Espine's sign). (5)Radiography, and especially stereo-radiography, is most valuable in these cases (*cf.* British Journal of Children's Diseases, 1913, x, p. 179). J. D. Rolleston.

The healing process of the infantile bronchial glands in tuberculosis (*'Journ. State Med.,'* 1915, xxiii, *p.* 7).—**E. Rist** discusses what becomes of the tuberculous bronchial glands of children who recover, and what changes take place in them, and he shows that, microscopically as well as macroscopically, the bronchial glands of the tuberculous adult are absolutely different from the bronchial glands of the tuberculous child.

The comparative study of glands at different stages of the healing process shows how the scar-formation is gradually completed; from the peripheral fibroid tissue, which lines the central caseous mass, bundles penetrate into this mass, which finally gives the colouring reactions characteristic of collagenous substance. These bundles are not exactly like connective bundles; they are less precisely limited and fibrillated; neither cellular elements nor elastic fibres can be found in their midst. It can hardly be said that there is a real sclerotic transformation of the gland; it might more accurately be called a hyaline degeneration. During this healing process, which, of course, requires a long time in each individual case, the tubercular follicular formations, which are a characteristic feature of the peripheral fibroid part of the caseous gland, gradually disappear. It is not correct to assume that those glands, in consequence of the healing-up process of infantile pulmonary tuberculosis, have lost their function, have become sclerotic throughout, and utterly unable to react. Indeed, they react normally to any disease, except tuberculosis. The author thinks that it would be near the truth to assume that caseation of the bronchial glands is not a specific character of childhood, but of primary tuberculous infection. If, on the other hand, pulmonary tuberculosis of the adult is, as a rule, not accompanied by caseation of the corresponding bronchial glands, it is not because the lymph-glands of the adult are essentially and physiologically different from those of the child, but simply because pulmonary tuberculosis of the adult is due to a re-infection. J. ALLAN.

Bronchogenous, placentogenous, dermatogenous, and enterogenous infection with tuberculosis in infancy (‘*Journ. State Med.*,’ 1915, XXIII, *p.* 16).—**C. von Pirquet** submits that for the first year of life the bronchogenous infection with tuberculosis is by far the most frequent way of entry (about 95 per cent. of all infections). The enterogenous infection is not important, at least not in Austria (1 to 2 per cent. of all infections). A placentogenous infection of the fœtus is a rarity, as are also stomatogenous and dermatogenous infections. Prophylaxis of infant tuberculosis has chiefly to deal with the separation of the nursling from the coughing adults. J. ALLAN.

The association of erythema nodosum and tuberculosis (‘*Journ. Amer. Med. Assoc.*,’ 1914, LXIII, *p.* 1266).—**O. H. Foerster** reviews the literature on the association of erythema nodosum with tuberculosis, and reports the cases of two sisters, both of whom developed erythema nodosum and cervical adenitis after measles. One subsequently presented tuberculous lesions of the skin, and died from tuberculous meningitis, while the other was presumably tuberculous, but was not definitely proved to be so.
T. R. WHIPHAM.

The study of the major varieties of bone and joint tuberculosis in children (‘*Journ. State Med.*,’ 1915, XXIII, *p.* 12).—**John Fraser** deals specifically with two of the major forms of bone and joint tuberculosis, Pott’s disease and hip joint disease, and his remarks apply directly to cases under treatment in Edinburgh. Three points may be noted. The first is the extraordinary prevalence of these serious major forms of bone and joint tuberculosis. The second is a consideration of the burden which has to be borne by the parents of children suffering from these diseases. The third point is one in regard to the difficulty of treating these cases with the facilities which are at one's command. The ideal course for dealing with cases of this nature is to remove the invalid to a home specially adapted for his treatment. J. ALLAN.

A case of acute general tuberculosis in an infant aged 3 months (*'Lyon Méd.,'* 1914, CXXII, *p.* 1441.)—**Péhu** and **Mouret**.—Both parents were in excellent health. A few days after parturition the mother had a febrile attack for which she was received into a maternity hospital for about three weeks. Her bed was beside that of a tuberculous patient with pulmonary cavities, who coughed and expectorated freely. As the infant was only breast-fed by its mother and by sterilised milk, the conclusion inevitably follows that during the short space of three weeks the infant was contaminated by inhalation. Examples of tuberculosis during the first three months of life are rare, and fall into three groups: (1) Those which occur under special morbid conditions; the mother being affected with severe tuberculosis there is passage of the bacillus itself through the placenta to the fœtus, which is born with congenital tuberculosis. Cases of this kind are very rare, only fifty-one having been recorded (see *'Arch. de Méd. des Enf.,'* 1908, XI, *p.* 1). (2) To establish in a scientific manner the reality of congenital tuberculosis it is indispensable that the infant should be separated from the mother from its birth. If this precaution is not taken the infant may have been infected by the mother's sputa. (3) This group includes all the cases of infants born of healthy parents and infected by contact with tuberculous people with whom they are placed.

VINCENT DICKINSON.

A culture of B. tuberculosis from the blood, post mortem, of a case of miliary tuberculosis (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, *p.* 1656).—**H. K. Faber** states that the cultivation of the tubercle bacillus from human blood has hitherto been unsuccessful owing to the difficulty in obtaining complete aerobiosis, a carefully regulated temperature, carefully titrated media and proper moisture. Of twenty-one cases of miliary tuberculosis examined at the Babies' Hospital, New York, only one was positive. The patient, from whom the culture was obtained, was a boy, aged 2½ years, whose tuberculous infection dated back about two months, and was the sequel of an attack of whooping-cough. The diagnosis of tuberculosis was made during life and corroborated at necropsy. Cheesy bronchial lymph nodes, extensive caseous change, with a cavity in an area of old broncho-pneumonia in the left upper lobe, tuberculous ulcers in the intestine, and miliary tuberculosis of the lungs, spleen, liver, and kidneys, were the principal pathological findings. Blood was taken for culture in the following manner: After opening the thorax, the pericardium was slit with scissors and the edges folded back. An area of about 2 × 2 cm. over the right ventricle was carefully seared with a red-hot knife. The knife was again heated and immediately plunged into the heart-cavity. A sterile pipette was introduced into the opening and a little over 1 c.c. of fluid blood was withdrawn and transferred directly to a plain agar slant. The tube was laid so that the blood covered the surface and, when the necropsy was completed, sealed with paraffin and laid in a similar position in the incubator. This culture remained apparently sterile, but with others of the series was examined microscopically once or twice a week. The contents of the tube were scraped with the platinum loop and partly redistributed over the surface. This not only gave access of air to the bacilli present, but probably formed a layer of serum on the agar surface in which the bacilli could multiply. After two weeks two or three acid-fast rods were seen, and after a month a clump of about twenty organisms was found. Transplants on to egg-broth medium showed apparently genuine tubercle bacilli, and inoculation of a month old culture, of the third generation, into guinea-pigs produced typical tuberculous lesions. From the spleens of these animals acid-fast bacilli, resembling in all respects genuine tubercle bacilli, were obtained. T. R. WHIPHAM.

Recurrent bronchitis in children (*'Arch. of Ped.,'* 1914, XXXI, *p.* 711, and *'New York State Journ. Med.,'* 1914, XIV, *p.* 485).—**C. G. Kerley** defines recurrent bronchitis as including those cases of illness in which there are attacks of bronchitis with severe cough, often with bronchial spasm. A small proportion of the cases suffer from true asthma. Food intoxication is the important ætiological factor—these children have far too much sugar and carbohydrate foods. The recurrent bronchitic patients should be cut off from sugar largely—entirely if the case promises to be difficult. Cow's milk is omitted entirely if the case is obstinate, but skim milk is allowed. The carbohydrates and fats found in vegetables, cereals, bread-stuffs, and meat supply all the heat and energy required. Suitable clothing of medium weight should be worn. The child should have a warm bath at bed time, followed by a vigorous rubbing and sometimes massage. Inasmuch as the so-called lithæmic type is the individual most frequently affected it is well to give such children interval treatment with sodium bicarbonate or sodium salicylate. If habitual constipation is present a free daily evacuation of the bowels is insured by suitable treatment. Clinical notes of several cases are appended. J. ALLAN.

Primary pulmonary actinomycosis in a child (*'Amer. Journ. Dis. Child.,'* 1914, VIII, *p.* 113).—**F. Huber** and **S. Berkowitz.**—A boy, aged 10 years, employed in a stable, received a severe blow on the chest; two weeks later he was suddenly seized with high fever, headache, and vomiting. On the following day an unproductive cough developed, followed by brownish expectoration, which later became greenish and fœtid. On admission to hospital four weeks after the injury there was much dyspnœa, prostration, and pallor. Extensive labial herpes was present. The movements of the right chest wall were much diminished, and percussion gave a "boardy" note, which was diminished from above downwards. The breath-sounds were distant and bronchial in character. Fine and large moist *râles* accompanied the breath-sounds. Examination of the sputum showed strepto- and staphylococci, but no ray fungi. Thoracotomy was performed and a pint of thick pus was evacuated. Death from exhaustion occurred a week later. The necropsy showed a solid right upper lobe, which was almost gangrenous on section, and honeycombed with abscesses containing yellowish-green pus. The pleura was thickened and covered with fresh fibrin. The lower lobe was studded with patches of broncho-pneumonia. The remainder of the lung was solid with reddish-grey hepatisation. The left lung was covered with a thin layer of fibrin, and a section showed numerous patches of red hepatisation. Microscopically the pulmonary alveoli were filled with exudate consisting partly of pure fibrin and partly of fibrin and large mononuclear cells. Scattered through the consolidated lung were collections of small round cells, in the centre of which there were from one to a dozen ray fungi. The exudate surrounding them was completely necrotic.

J. D. ROLLESTON.

Some manifestations of influenza in young children ('*New York State Journ. Med.*,' 1914, xiv, *p.* 479).—**L. Emmett Holt** protests against the promiscuous use of the term influenza, which means an infection or inflammation due to Pfeiffer's bacillus. The diagnosis of influenza should only be established by finding the organism in the secretions, but a diagnosis by the examination of smears is unreliable. Only cultures can be depended upon. Several definite clinical types may be noted. (1) Pneumonias with unusual, often extraordinary, fluctuations of temperature or with a persistence of temperature after physical signs have disappeared. (2) Pneumonias running a protracted course, with slow resolution. Frequently there are recurrent attacks. (3) Cases of otitis with very mild catarrhal symptoms, often only a moderate cough, and a few coarse râles in the chest, but with a temperature quite out of proportion to the general or local symptoms. (4) Cases with very few or no catarrhal symptoms whatever, but with a very unusual temperature curve. (5) Unusual temperature curves accompanying tuberculosis and sometimes other diseases. (6) Cases resembling whooping-cough, seen chiefly in older children, seldom in infants. In this last group the author has found a differential leucocyte count of great value in diagnosis. J. ALLAN.

A case of abscess of the lung or the interlobar tissue evacuated through the bronchi cured by artificial pneumothorax ('*Gaz. Hebd. des Sc. Méd. de Bordeaux*,' 1914, xxxv, *p.* 303).—**G. Leuret** and **Aubert.**—The patient was a girl, aged 15½ years, who had suffered from diphtheria followed by bronchopneumonia. Owing to repeated serious hæmorrhages occurring with the expectoration of large quantities of purulent matter and a continuous aggravation of the patient's condition, artificial pneumothorax was performed with complete success. F. R. B. ATKINSON.

Some thoughts on the atypical pneumonias of infancy and childhood ('*New York State Journ. Med.*,' 1914, xiv, *p.* 437).—**Edward J. Wynkoop** in this paper does not go into all the symptoms that might occur in any unusual form of pneumonia, but emphasises two symptoms, vomiting and abdominal pain, that are sometimes present, but when present in pronounced form often lead to mistakes in diagnosis. This is especially true in the atypical varieties of the disease. The significance of these two symptoms is carefully discussed, and the author points out that too much emphasis cannot be placed on a careful, accurate, painstaking physical examination.

J. ALLAN.

A lobar form of broncho-pneumonia of long duration occurring in children and young adults ('*Am. Journ. Med. Sci.*,' 1913, CXLVI, *p.* 313).—**D. Riesman** describes seven cases of continued fever, lasting from several weeks to three or four months, occurring in persons between the ages of ten and twenty-eight, and characterised by impaired resonance, extending over the lower lobe of one lung, usually the left. From the base to the middle or the angle of the scapula *râles* are abundant, consonanting, and chiefly moist, but a few are dry. They are heard best in inspiration, and are often increased by coughing. The onset is gradual and the fever moderate, the temperature rarely rising above 101° F. The disease was not associated with influenza, whooping-cough, pulmonary tuberculosis, or heart disease. Pneumococci occurred chiefly in the sputum. It is not an interstitial pneumonia, as recovery occurs without retraction. It is a confluent lobular pneumonia of lobar distribution. CHRISTOPHER ROLLESTON.

Two cases of the appendicular form of pneumonia with expulsion of an ascaris ('*Arch. de Méd. des Enf.*,' 1914, XVII, *p.* 607).—**M. Lassalle** describes two cases of pneumonia in boys, aged 10 and 11 years, in whom also signs of appendicitis were manifested a few days after the pneumonia had occurred. The former completely cleared up after an ascaris had been vomited. F. R. B. ATKINSON.

Pulmonary sclerosis in children ('*Gazz. internaz. di Med., Chir., etc.*,' 1914, *p.* 601).—**F. Amenta** records a fatal case in a girl, aged 22 months, following broncho-pneumonia. The necropsy showed sclerosis of the left upper lobe, fibrinous pleurisy on the left and purulent on the right, and pericarditis. J. D. ROLLESTON.

Two cases of apnœa in infants ('*Med. Journ. of Austr.*,' 1914, I, *p.* 446). —**W. F. Litchfield** lost two cases of children, aged 5 weeks and 4 days old, from attacks of apnœa and cyanosis. Artificial respiration proved unavailing. F. R. B. ATKINSON.

Otology, Rhinology and Laryngology.

The conservation of hearing ('*Cleveland Med. Journ.*,' 1914, XIII, *p.* 622).—**G. Wishard**.—A useful paper, pleading for the better treatment of ear conditions in young children. He insists that acute tubo-tympanic catarrh is the beginning of most middle-ear disease, and better care of the throats of children suffering from the ordinary infectious diseases is needed. A strong case is put forward for prevention. MACLEOD YEARSLEY.

Otology in relation to infectious fevers, public health, and education ('*Edin. Med. Journ.*,' 1914, II, *p.* 81).—**J. S. Fraser** reviews some of the more important methods of prevention and treatment of deafness in school children. In the author's opinion, if ear disease were treated at fever hospitals and school clinics much unnecessary deafness, not only in children but also in adults, would be avoided, and the large mortality due to the intra-cranial complications of middle-ear suppuration greatly reduced.
J. ALLAN.

Report of a case of otitic meningitis due to the Streptococcus capsulatus ('*Arch. of Ped.*,' 1914, XXXI, *p.* 766).—**C. Johnstone Imperatori.**—Boy, aged 7 years. Left otorrhœa at age of 9 months, recovered in four weeks. At age of $3\frac{1}{2}$ years, tonsils and adenoids removed. Recurrence of otorrhœa following year, when tonsil and adenoid operation was repeated. Three years later, acute purulent otitis, double paracentesis, improvement. Next day, signs of early meningitis, lumbar puncture, improved. Three days later double mastoid operation; *left*, dura exposed and healthy, tip and sinus cells necrotic; *right*, mastoid cells necrotic, pus. Two days later, lumbar puncture, exploration of left middle cranial fossa, drainage of cisterna magna. Death fifty hours later; no autopsy. MACLEOD YEARSLEY.

Two cases of otitic extra-dural abscess ('*Edinb. Med. Journ.*,' 1915, I, *p.* 68).—**J. S. Fraser** gives in detail the clinical histories of two cases (boys, aged 7 and 9 years respectively) of extra-dural abscess, which is the commonest of the intra-cranial complications following suppurative otitis media. In one case the symptoms closely resembled those of septic thrombosis of the sigmoid sinus, and in the other those of basal leptomeningitis.

Very frequently the condition is not diagnosed before operation, but symptoms suggestive of the condition are: (1) Localised headache; (2) fever; (3) localised tenderness, especially over the posterior border of the mastoid process. The presence of fever is important, as mastoiditis alone very seldom gives rise to a temperature of over 100° F. except in very young children, or in cases associated with infectious fevers. In the two cases recorded by the author the radical mastoid operation was done with complete success.

J. Allan.

Parotid fistula following mastoid operation ('*Boston Med. and Surg. Journ.*,' 1915, CLXXII, *p.* 25).—**P. Hammond.**—A girl, aged 9 years. Mastoid operation on right ear five years earlier. Persistent watery discharge from the right cheek since. The fistula was at lower end of scar near to the lower angle of jaw. The fistula was easily cured by operation. Another case, in a boy, aged 4 years, is reported by Canesteo in the '*Annals of Otology*,' XXIII, p. 148.

Macleod Yearsley.

Complications of accessory nasal sinus inflammations in scarlet fever ('*Jahrb. f. Kinderheilk.*,' 1914, LXXX, *p.* 536).—**M. Paunz.**—Acute inflammation of a mild degree of the antrum of Highmore or the ethmoid cells is probably common in scarlet fever, and may occur at a very early stage. At operations or autopsies the mucosa is reddened and œdematous, and frequently shows hæmorrhages. There is a serous, muco-purulent or purulent secretion in the cavity, from which streptococci, staphylococci, or pneumococci can be cultivated. As long as no complications occur, the diagnosis of accessory nasal sinus inflammation is usually not made, though its presence may be conjectured by the occurrence of nasal discharge. When complications occur, the diagnosis rests on definite symptoms: (1) Inflammatory œdema of the skin; (2) very marked tenderness; (3) high fever. The œdema always corresponds to the sinus affected, inflammation of the ethmoid cells being indicated by œdema at the internal canthus, while, if the frontal sinus is involved, the œdema spreads over the frontal bone. Inflammation of the sphenoid sinus is rarely seen in scarlet fever, because this sinus is not yet developed in children. Œdema of the lower lid is frequently found as a sign of inflammation of the antrum of Highmore. Later on a periosteal abscess may occur and a bone fistula result. Perforation may take place internally and give rise to serous or purulent meningitis. The prognosis in inflammation of the frontal sinus is usually worse than in inflammation of the maxillary and ethmoid sinuses, but is good if the operation is carried out in time. An illustrative case is recorded in a girl, aged 4 years, who developed inflammation of the left ethmoid cells and frontal sinus in the second week of septic scarlet fever. Complete recovery followed operation.

J. D. Rolleston.

Rhinolith of several years duration in a child, aged 8 years ('*Med. Record*,' LXXXVI, *p.* 673).—**Barnet Joseph.**—The chief symptom (as usual) was unilateral nasal discharge. The cause was apparently a fall on the face five years earlier, followed by profuse epistaxis lasting half an hour. The rhinolith consisted of undefinable detritus, calcium phosphate, carbonate, and hemosiderin. As the latter is found only in old, decomposed blood-masses, it suggests that the nucleus was a blood clot.

Macleod Yearsley.

Relation of the tonsils, adenoids, and other throat conditions to tuberculous cervical adenitis ('*Boston Med. and Surg. Journ.*,' 1915, CLXXII, *p.* 1).—**G. L. Richards** discusses the anatomy of the lymphatics in this region and the development of the tonsil. It is not probable that all enlarged lymph glands are tuberculous, presumably about 80 per cent. of them are. MACLEOD YEARSLEY.

Cervical adenitis (‘*New York Med. Journ.*,’ 1914, c, *p.* 705).—**Stauffer** wishes to present the view of the rhinologist on this disease. He considers cervical adenitis is usually the result of adenoids, hypertrophied tonsils, etc. It is necessary to remove this cause to cure the adenitis. He suggests: (1) Early cleansing of the mouth, nose, and ears. (2) Complete removal of adenoids and tonsils. (3) Early adjustment of irregular teeth, or filling decayed teeth or removal of decayed roots. (4) Early mastoid operation for any purulent otitis media present. (5) Plenty of good food, regular baths, exercise, and plenty of sleep. Plenty of fresh air day and night is necessary to counteract the blocking of the air to the lungs from the adenoids and enlarged tonsils. J. PORTER PARKINSON.

Tonsillotomy versus tonsillectomy (‘*New York Med. Journ.*,’ 1914, c, *p.* 1097).—**T. R. French.**—A differential diagnosis should be made to determine whether the tonsils are the probable sources of infection or are free from disease. The history and appearances of the glands are often sufficient for this purpose. It is desirable to leave the capsules in the tonsillar fossæ whenever possible, owing to subsequent pharyngeal deformity. It is probably safe to say that at least 80 per cent. of enlarged tonsils do not contain foci of infection, and should be removed only when obstructing voice or respiration. Whenever there is a doubt as to the condition of the tonsils part should be removed and examined under magnification of five to ten diameters in a brilliant light. MACLEOD YEARSLEY.

Teratoma of the pharynx (‘*Laryngoscope*,’ 1914, XXIV, *p.* 798).—**C. C. Eves.**—A male infant, aged 14 months, was brought to hospital with the history that since he was three weeks old he had been subject to vomiting, after which a finger-like process would protrude from the mouth. On ordinary examination of the throat nothing abnormal was seen, but on making the child retch a smooth, pinkish growth, of the size and shape of the child’s little finger, was shot forward, protruding about half an inch beyond the lips. It was attached by a pedicle to the right side of the posterior wall behind the upper end of the posterior pillar, and when not protruded hung down into the œsophagus. It was excised by curved scissors without an anæsthetic. Its covering was formed of skin with fine downy hairs and mucous membrane, and the centre, on section, was found to consist of subcutaneous fat. J. D. ROLLESTON.

Retro-pharyngeal abscess (‘*Med. Rec.*,’ 1914, LXXXVI, *p.* 1009).—**B. A. Fedde** describes three cases, in a boy, aged 13 months, a girl, aged 3 years, and a boy, aged 7 months, and discusses the anatomy, diagnosis, and treatment. Anæsthesia is dangerous. The author prefers to operate with the patient’s head in his lap, turning the child over on its face as the pus wells out. Hilton’s external incision is required in some cases.
MACLEOD YEARSLEY.

Retro-pharyngeal abscess, with rupture, asphyxiation, and death, following acute tonsillitis (‘*Laryngoscope*,’ 1914, XXIV, *p.* 985).—**C. C. Charlton** records a case in a boy, aged 8 years, who died suddenly from the bursting of a retro-pharyngeal abscess a fortnight after an attack of acute tonsillitis. J. D. Rolleston.

Congenital laryngeal stridor ('*Lancet*,' 1914, II, *p.* 1147).—**J. H. Sheldon** reports a case in a bright, well nourished, male infant, aged 5 months. Health good; no signs of rickets or syphilis. The family history indicated nothing except the occurrence of asthma in the children of an aunt of the patient's father. The chief features of the case were: (1) Stridor present from birth; (2) transverse furrowing of the lower chest wall; (3) certain auscultatory signs; (4) absence of cyanosis; (5) absence of laryngeal excursion; (6) a heart-rate uninfluenced by respiratory movements; and (7) the excellent health of the child. J. Allan.

A case with open safety-pin in the œsophagus ('*Interstate Med. Journ.*,' 1914, XXI, *p.* 1084).—**G. W. Mackenzie.**—A male infant, aged 7 months, was playing with a safety-pin when it suddenly was missed. There were no symptoms, but a skiagram showed it to be lodged in the œsophagus just below the level of the first rib. Under ether six unsuccessful attempts were made to remove it with a 6 mm. Kahler tube and a tenaculum forceps. A skiagram, taken at 9 a.m. the next day, showed the pin in the stomach. The child was then pale, restless, and dyspnœic. Some improvement occurred, but death took place suddenly at 1 p.m. Post mortem a small perforation was found in the left side of the œsophagus, just below the lower border of the left lung, communicating with the left pleural cavity. The lung was collapsed and covered with ropy adhesions.

J. D. Rolleston.

Jackstones impacted in the œsophagus: report of three cases in four days: one death ('*Arch. of Ped.*,' 1914, XXXI, *p.* 610).—**G. M. Coates.**—The cases occurred in children aged 12 months, 17 months, and 24 months respectively. Recovery took place in the first and third cases after removal of the stones, but the second died from suffocation.

F. R. B. Atkinson.

The importance of a very thorough examination in cases of foreign body alleged to have been swallowed or inhaled ('*Lancet*,' 1914, II, *p.* 493).—**E. D. Davis** describes the very interesting case of a girl, aged 7 years, who had swallowed a rabbit bone four months before the consultation. The bone was lodged in the glottis and surrounded by granulation tissue; it was removed by Killian's method. Short accounts of seven other cases are added from the experience of various observers. The author pleads for the use of the bronchoscope and œsophagoscope as far superior to the older forms of instrument. Macleod Yearsley.

Removal of foreign bodies from the œsophagus and lower air passages in children ('*Boston Med. and Surg. Journ.*,' 1914, CLXX, *p.* 517). **D. Crosby Greene** and **F. E. Garland.**—Twenty cases occurring in five years of service in a children's hospital. Of these ten cases were those of foreign body in the œsophagus, three in the larynx, three in the trachea, and four in the bronchi. Only two cases died, one from pulmonary abscess, one from exhaustion. The removal of foreign bodies in these situations in children differs from that in adults in: (1) Anæsthesia—children require a general anæsthetic. (2) The smaller calibre of the air passages necessitates smaller instruments. Macleod Yearsley.

Reviews.

Asthma and its Radical Treatment. By J. Adam, M.A., M.D., F.R.F.P.S.Hamilton. With 4 illustrations. Pp. 184. London: H. Kimpton, 1913. Price 5s. net.

The author of this little book holds firmly to the view that asthma is a toxæmia and not a neurosis, and his experience has shown him, during the last fifteen years, that only the toxæmic hypothesis of the disease can lead to a radically curative treatment. The eleven chapters into which the volume is divided discuss bronchial asthma from various points of view, and incidentally make it plain that, while Dr. Adam has studied the British literature of the disorder and has a gift for speculative pathology, he has also had an extensive practical experience in the treatment of asthma. He marshals all the theoretical evidence he can to prove that in both probability and fact some disturbance of the metabolism, resulting in acute or subacute toxæmia, is the essential factor—though not the only one—in the production of the bronchial spasm that characterises the asthmatic paroxysm. In the earlier pages he quotes with approval Bouchard's work on the toxicity of the urine, arguing that if the urine is toxic, and if it is abnormal in quantity or constituents, after an attack of asthma, then asthma is probably toxæmic in origin. No evidence, however, is brought forward to show that the toxicity of the urine is greater during or after an attack of asthma than it was before, a point that seems essential before the validity of the argument can be accepted. On a later page he quotes the more recent work of Eustis, who believes the toxin that produces asthma to be one of the complex amines resulting from the normal pancreatic digestion of protein. Dr. Adam gets on to firmer ground in his chapters on prognosis and treatment, and these form the most valuable part of his work. The patient's teeth must be set in order so that he may be able to masticate his food; his nose must be thoroughly examined in order that abnormalities—adenoids, polypi, hypertrophic turbinals, for example—may be corrected; and, most important of all, he must live on a rational diet, with three meals a day and a proper amount of work or exercise. In severe cases fasting one day a week, or the consumption of nothing more than buttermilk on Sundays, is recommended. When asthmatic paroxysms occur Dr. Adam recommends that a mixture containing belladonna, potassium iodide, and liquor arsenicalis should be given for a few weeks; the iodide, he says, is a "great help to tissue metabolism and in combating toxæmia." The book may be recommended to all medical practitioners who have to treat patients with this chronic and rebellious complaint. It is clearly written, optimistic, and full of valuable practical suggestions. A. J. J.-B.

Transactions of the National Association for the Prevention of Consumption and other Forms of Tuberculosis. London: Adlard and Son, 1914. Price 5s. post free.

The sixth annual conference was held in Leeds in July of last year. The three subjects for discussion were: "The House in Relationship to Tuberculosis," "Domiciliary Treatment," and "Tuberculosis, especially Surgical, in Childhood." The opening address was delivered by Sir Wm. Younger, who drew attention to the fact that the highest death-rate was to be found in districts which had the largest number of one- and two-room houses, and where, as in Edinburgh, the insanitary and densely populated areas were cleared, the death-rate from the disease fell from 3·8 to 0·4 per 1000, and the general death-rate from 45 to 15 per 1000. Sir Robert Philip continued the discussion, and pointed out the frequency with which tuberculosis appeared in different families originally healthy occupying successively the same dwelling. He considered that a certificate should be issued by the local authority in the case of every house offered for habitation, and no house should be occupied which did not obtain such a licence. Dr. Cameron noted that as a rule the percentage of phthisis deaths to deaths from all causes is highest where the general death-rate and density of population are also highest; also that the over-crowding of houses shows a more direct connection with the general death-rate than it does with the phthisis death-rate. Colonel Kyffin-Taylor drew attention to the condition of houses at Liverpool, and noted that closing and demolition of houses without re-housing caused an increase of sickness, as it necessitated over-crowding in other parts, but when sanitary houses were built in place of those destroyed the mortality of phthisis decreased from 4 to 1·9 per 1000.

Dr. Knaggs opened the discussion on "Tuberculosis in Childhood," and stated that in bone and joint cases in Edinburgh up to the age of eight years, bovine infections were twice as numerous as human infections. Dr. Gauvain recommended the establishment of hospitals far from towns devoted to the use of surgical tuberculous cases containing 1000 beds for children. Dr. Vining recommended in cases of discharging sinus the use of a lotion of 4 per cent. of sodium chloride and ·5 of sodium citrate. Dr. Watson pleaded for more open-air schools, the avoidance of kissing the baby, a good milk supply, and boiling the milk. The general treatment of these cases was dwelt upon by various speakers. Mention during the discussion was also made of Dr. Mitchell's investigations into the cause of enlarged tuberculous glands (See Brit. Journ. Child. Dis., 1915, xii, pp. 115 and 117). Dr. Raw has found that children attacked with surgical tuberculosis were to a great extent protected in after life against consumption, and those primarily attacked with the latter were immune from the former. He stated that buttermilk was especially liable to be infected with the bacillus, and he found that margarine was much less infected with tubercle than butter. He also advised that all milk should be boiled and all tuberculous cows destroyed. Alderman Shelmerdine described his experiments with the electrical treatment of milk.

Sir W. Osler opened the discussion on "Domiciliary Treatment," which was continued by Dr. Woodcock, who did not consider milk the greatest danger in the production of tuberculosis, but the presence of overcrowding and polluted dust and air. Various speakers considered the treatment of the consumptive person at home, as well as the sanitary condition of the house, and Dr. Campbell considered the best solution of the difficulty was to provide cottages in the outskirts of the towns with sufficient ground around to provide work in the open for those unable to undertake ordinary employment. Dr. Vallow read an interesting paper on an analysis of different methods of treatment of tuberculous people, comparing tuberculin treatment with or without sanatorium treatment, "emulsion" cases with or without sanatorium and hospital treatment, and treatment of school-children with or without sanatorium treatment, and with or without tuberculin treatment, a paper well worth reading. Most of the papers are deserving of study, and we can recommend the 'Transactions' to all who are, and all ought to be, interested in the subject.

F. R. B. Atkinson.

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MONTESSORI EDUCATION FOR CHILDREN WITH DEFECTIVE SIGHT.*

By Leslie Paton, F.R.C.S.,

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My attention was first called to the value of Madame Montessori's system of education and its possibilities in training children with very defective sight by the case of a small patient, aged 2½ years when I saw him first. Severe ophthalmia neonatorum had caused blindness in the left eye and very defective vision in the right eye. In July of last year when I saw him again he was 3½ years old, and I was very greatly impressed by the general intelligence of the boy and by the fact that despite his great visual disabilities he already knew his letters and was able to count small numbers. The parents ascribed this to the training he had had during the preceding six months at a Montessori school. I have since had occasion to investigate a little more fully the value of this method for the training of normal children and though I have no more than a superficial book knowledge of it, it seems to me to have possibilities for training blind children or those with defective sight which, as ophthalmic surgeons, we should know about and, if possible, develop.

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* A paper read before the Ophthalmological Section of the Royal Society of Medicine on March the 3rd, 1915.

My subject matter will be in no way new to those who have taken an interest in problems of child psychology or modern elementary education, but even in quarters where such an interest might be expected to be most active I have found the most complete ignorance on these subjects, an ignorance which I shared a few months ago. For the education of children of school age with defective sight much has been done in recent years, and only last year Mr. Bishop Harman read an excellent paper before the Section on methods in use. But it is for younger children in the very important formative period of three to six that the Montessori methods are at present adapted. During those years the child is undergoing its most important sensory education. It is learning to use not only all the ordinary senses of sight, hearing, touch, taste, and smell, but also the muscular and stereognostic senses, and to associate the percepts arising from these various senses and to co-ordinate its movements. Froebel stood almost alone in the attempt to systematise education during this important period of a child's life. But in many quarters it was and still is regarded as sufficient to allow the normal practical contact with the surrounding and expanding world of the child's life to give it the experience necessary for its development. Only in cases where the child remains in an obviously defective condition after reaching normal school age are attempts made to adopt systematic methods of dealing with these sensory defects. The most important work in this line was done by Séguin, who published his 'Traitement Moral, Hygiéne et Education des Idiots' in Paris in 1846. This work, though it avowedly deals with the treatment of defective children, is based on such sound psychological observation of child life and development that to the present day it forms the foundations on which all child educators must build. Madame Montessori herself acknowledges in the fullest fashion all that she owes to Séguin and to her early experience in dealing with defective children. Indeed, it was mainly the fact that defectives could be brought to such a level of accomplishment that they could compete on equal terms with normal children of the same age which induced Madame Montessori to realise that the methods in use for normal children must be in some way lacking, and determined her to take up the question of applying Séguin's methods to the teaching of normals. She gave up her medical work entirely and devoted seven years to the study of pedagogy and pyschology, especially the psychology of the child, and it was only in 1907 that the first school under the Dottoressa's guidance was opened in Rome. These intervening eight years have witnessed a great development and extension of the method, so much so that even in this conservative country several classes have already been started. I know of three schools in London, a very flourishing small school in Runton, and one in Birmingham, a class in a village school in the New Forest, and large classes in elementary Board Schools in York and in Sunderland. The main difficulty in the way of the extension of the system, apart from the inertia of the teaching profession and the public or the parents, is the difficulty of finding the right conductor. I avoid the use of the term teacher because the essence of the method is to allow the natural development of the child to take place with the most scrupulous avoidance of any attempt to force it into a common mould. It requires a patience worthy of Job himself to avoid interfering when a child is seen doing an exercise wrong time after time; but the reward comes in the intense satisfaction displayed by the child when at last it succeeds in doing it rightly unaided. Much of the training is of such a character that the child can be left to work out the correct method by itself, and in some quarters this feature has given rise to a false impression that the children are allowed to do as they please. This is quite untrue if it is meant to imply an absence of discipline; but in the sense that the child is encouraged to develop its natural healthy aptitudes fully and freely it is true. A child who is tired of one particular exercise or who finds it beyond his capacity will gain no benefit by being kept at that exercise. If he is interested in it no outside enticement will take his mind off it until he has achieved it. This is one of the important points in which it differs from the kindergarten system, where it is supposed that it tires a child's brain to keep it more than a limited space of time at one exercise. The result is that as soon as the child becomes thoroughly interested in one thing his mind is distracted into another quite different groove; as an intelligent small boy remarked, "The lesson was all interruptions." I feel sure this is based on a wrong idea of child psychology, and that so long as the child is interested there is no chance of brain fag. Constantly changing the channel in which the child's mind is running is much more likely to tire it out. A child left to itself possesses a power of concentration on the work or play on hand which might serve as an example to many of its elders. Surely the Montessori system, which tends to conserve and develop this power, is preferable to one which dissipates it. Within the limits of a short paper I can only deal briefly with the material basis of the system, but I hope it may be sufficient to let the section realise how easily it could be adapted for the use of children whose sight is lost or defective. Indeed, even with normal children many if not most of the exercises are done frequently blindfolded to educate the tactile muscular and stereognostic senses. And if it is important to train these senses in normal children, how much more important is it to do so in the child who is deprived of that sense which for most of us is the main one to which our educative processes have been adapted. Before I go further I think it may interest members to see what kind of result can be reached in education in the ordinary limited sense of the word. I ask you to look at a sample of writing by a child five years old. A sense of shame alone prevents me from putting up for comparison a sample of writing by one who only painfully acquired the art by copying pot-hooks and copy-book phrases. Vision in the Montessori system plays a very small part in learning to write. The art is acquired almost casually as a by-product in training the tactile and muscular senses.

A child of three is first started on what may be called exercises of practical life—buttoning, lacing, fastening hooks and eyes, and tying bows. I have seen a normally restless and over-active child sit quietly for an hour over one or other of these frames, making many mistakes, but realising them for herself, and not in any way relishing the interference of the intrusive elder who wishes to show her how to do it, and ultimately triumphing in doing it correctly unaided. This is the first exercise in muscular co-ordination. The second series is devoted to the tactile sense. It consists of boards covered with strips of sandpaper and fabrics of different texture and surface, which the child learns to differentiate blindfolded. Then come exercises in the discrimination of simple sounds gradually leading up to musical sounds and the development of a sense of rhythm. With this is associated the teaching of the art of moving quietly and gracefully, and, in a later stage, dancing.

Perception of weight is taught by means of blocks of wood of the same size, but of varying density.

The next series of exercises introduces the child to the idea of dimension. Three series of inset blocks, which vary (*a*) in length only, (*b*) in breadth or diameter only, and (*c*) in length and breadth. Starting with one set at a time, the child learns to fit them all into their proper places, until finally it can do the exercise with all the blocks mixed together. This exercise is done both visually and tactually, and ultimately, as tactile discrimination develops, a child will fit every block in without mistake when blindfolded. In this series the apparatus is self-corrective, and the child can be left absolutely to itself to play with the insets. The idea of dimension is carried further by the tower, cubes varying in three dimensions, the broad stair, bricks varying in two dimensions, and the long stair, where only one dimension varies. This also serves to introduce later on the idea of number. The child, of course, is told the names of the different dimensions, and learns to appreciate length, breadth, and height.

The next teaching material introduces the idea of form. It consists of a large series of wooden frames with geometric insets of various kinds. These are used first of all visually and then blindfolded, and the child fits the form into the frame by tactile muscular sense. From the point of view of education in the narrower sense of the word this forms one of the most important steps in the process of learning to write. The child in a very short time gains such a control of the tactile muscular sense that simply by feeling the outer edge of the insets and the inner edge of the frames it is able to fit in any one of these figures from the simplest to the most complicated. At the same time, it is taught the names of the different figures, and though it may seem absurd to talk of a child of four knowing anything of geometry, it is actually acquiring ideas of shape which are the basis of all geometrical teaching, and this is carried further by a series of cards reproducing these shapes, first in solid colour, then in thick outline, and then in thin outline, so that the child fitting the insets over these gradually is carried over mentally from the concrete form to the abstract idea of spatial relations limited by lines.

I am afraid the training of the colour-sense will hardly be applicable to blind children, so I pass on to the next material, which consists of metal insets similar to the wooden ones. With these the child commences to use pencils and coloured chalks, forming the outlines on cards and filling them in with colours. At first the colours may transgress the bounds of the outlines wildly, but in an astonishingly short space of time muscular control is gained, and the figure is filled in with strong, firm lines. This exercise would probably have to be modified for children with defective sight, and, instead of outlining the inset, the outer frame would have to be made of metal, and after outlining the figure the child would use the frame as a control for filling in the figure. It would thus gain in a similar way power of muscular control over a pencil.

The first alphabetic material consists of script letters cut out in sandpaper and mounted on cards. These the child learns more by touch than by vision. The card is held in the left hand, and the right index-finger is passed lightly over the sandpaper from left to right, and the name of the letter is repeated. For normal children the vowels are printed on blue and the consonants on pink. With blind children different roughnesses of sandpaper or some difference in surface texture could easily be devised for differentiating purposes. As the child is learning these letters by tactile muscular sense, it is at the same time practising the movements of muscular co-ordination, which are necessary for the formation of the letters, and as it has gained already the power of control of a pencil or chalk, it suddenly realises its power of combining these two acquirements, and without any further instruction writing is an accomplished fact in that child's training.

Mr. Holmes, in his report to the Board of Education, gives six weeks as a very ordinary time from the beginning of the training till the writing of actual letters. With older children of six or more this may be reduced to a month, and so excellent is the control of muscular movement that from the very first the writing of Montessori children compares favourably with the writing of third and fourth standard children, and, as I have already said, compares more than favourably with the writing of some adults whom I could mention.

When we come to reading we are faced in this country with a difficulty that is not met with in Italy. Italian is probably the most purely phonetic language in Europe, and the child who has learned the sound of the various letters has only to name these successively, with gradually increasing rapidity, until he recognises that they form a word which he knows. English is probably the least phonetic language in Europe, and, at least to begin with, great care must be exercised in selecting words which are phonetic. The letters for teaching the formation of words are cut out of the cardboard and unmounted. The child has meantime learned all their names, both visually and tactually, but you may still see them, if they are a little doubtful, passing their fingers rapidly over the letter. It would almost seem as if the tactile impression conveyed a more vivid impression to their intelligence than the visual.

In teaching numeration and arithmetic we go back first to the long stair which increases by lengths of one decimetre from one to ten. The names and shapes of the numbers are learned by means of sandpaper figures like the letters, and counting and addition and subtraction are learned by means of the counting boxes and sticks, and for numbers over ten by wooden frames with printed numbers.

This material substratum of which I have been speaking is only a part, I might almost say a small part, of the method. The whole method itself is of no avail if the principle underlying it is not fully appreciated. Of course it is revolutionary, a reversal of previously accepted notions of elementary education. It is the free development by the child itself of all its inherent capacities, as opposed to the inculcation from an outside source of dogmata which the child may or may not accept willingly or sullenly, but which as they are usually enforced do not easily become a part of the child's intellectual concepts. Everything that he acquires by the Montessori method he acquires for himself. It is part of his own intellectual being built up from his own sensory percepts. It is he himself who has learned to observe and to associate the resulting ideas, and his knowledge grows from natural roots and is not a forced graft from an outside source, and lest it might be thought that there is anything forced or fatiguing about the almost uncanny rapidity of progress I may definitely say that these children are all the time quite unconscious that they are doing anything more than playing at a most absorbing game, and the weeping is very bitter if for any reason they are kept away from this game.

Possibly the most important feature in the whole method is the development of the sense of self-discipline in the child and its unconscious realisation of its social duty to other children. Mr. Holmes, late chief inspector of elementary education, speaking of this factor, has remarked how speedily even the most turbulent and unruly children become aware of their duty of self-control or have it enforced on them by the example of the community. By no other method can there be so full a development of the sense of individual freedom with self-discipline and the sense of duty as a member of a social community. And he went on to say that Montessori trained children, when they came under the more restrictive discipline of ordinary school-life, instead of proving less amenable, are more easily controlled than the ordinary child.

For visually defective children some slight modifications would be necessary in some parts of the apparatus. In learning numeration the long stair, instead of being made in alternate colours, blue and red, would have to be made with alternating rough and smooth surfaces. Sandpaper figures would have to be used in the counting-boxes. Frames and blocked sandpaper letters would have to be used in forming words, but so efficiently are the tactile muscular and stereognostic senses developed that I believe it would be possible to get a blind child to write on ordinary paper, keeping a moderately straight line, without the use of any of the mechanical devices which most of them have now to use. Helen Keller is a revelation of the possibilities of continuous and assiduous care in training where blindness and deafness were combined. For those less affected I believe Madame Montessori's system has possibilities capable of producing results almost as miraculous, and the purpose of my paper is simply to call the attention of the Section to it in the hope that it may be of use to members who may at any time be called on to give advice as to what is to be done in regard to the training of children who are blind or whose sight is defective.

CASE OF INFANTILE HEMIPLEGIA AFFECTING THE LEFT HALF OF THE BODY, WITH CONSIDERABLE UNDER-DEVELOPMENT OF THE LEFT UPPER EXTREMITY; JACKSONIAN CONVULSIONS AFFECTING THE PARALYSED UPPER EXTREMITY; PETIT MAL.*

By E. G. Fearnsides, M.D., M.R.C.P.,

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The patient, a boy, aged 7¾ years, was the fifth child of a family of seven children, four of whom survived. The father and mother were healthy. One child died from "measles and bronchitis" at the age of 16 months, a second of "appendix abscess" when aged 4 years, and a third of "meningitis" at the age of 20 months. At birth the patient was a small but apparently healthy child; as a baby he was constantly ailing. At the age of 6 months he was laid up for some weeks with "whooping-cough and bronchitis," and during this illness developed otorrhœa. He walked at the age of 13 months, talked at the usual time, and until the summer of 1910 seemed a perfectly normal child. Early in August, 1910, he had a "slight fit," which lasted a few minutes only, and was not followed by any paralysis. On September the 22nd, 1910, after a similar fit, he vomited and lost consciousness, and for five days lay comatose. On September the 28th, when he recovered consciousness, he was found to be hemiplegic and to have sustained a number of superficial burns, the largest on the left thigh, produced by the application of hot bottles to his limbs and abdomen. Between September the 28th and October the 10th, 1910, when he first came under my observation, he was dazed and apathetic, asking for what he wanted and understanding more or less what was said to him. Although at this time he passed urine into the bed, yet he never passed a motion unwittingly. He coughed from time to time. On October the 10th, 1910, he was admitted to the London Hospital under the care of Dr. Percy Kidd, and remained an in-patient until Novomber the 14th, when he was discharged to a convalescent home.

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* The case was shown to the Neurological Section of the Royal Society of Medicine, on February the 25th, 1915.

On admission the temperature was not raised, the rate of the pulse was 96 beats per minute, and of respirations 24. The patient, who was pale and looked ill, lay in bed, somnolent and apathetic, but could be roused, and then was irritable and yawned frequently. From the right ear a copious discharge was seen to proceed through a large perforation in the drum, and it was observed that he preferred to lie with his head on the right side and resented rotation of his neck, but there was no cephalic retraction. The right optic disc and fundus appeared normal; the inner margin of the left disc, however, was indistinct, but the vessels were unaffected. The left half of the face was paretic. The tongue came out straight on protrusion, and the movements of the palate were unaffected. The left upper extremity was flaccid and could not be moved voluntarily. The left lower extremity was stiff, spastic, and extremely paretic. On the left half of the body the deep reflexes were increased, ankle clonus was obtained, and the left plantar response was extensor; on the right side the reflexes were normal. Abdominal reflexes were obtained on both sides, and Kernig's sign was not present. On the external aspect of the left thigh were two recent burns (1½ in. by 3 in. and 1½ in. by 2 in.), and smaller burns were seen on the inner aspects of the right thigh and right arm. He passed urine incontinently under him, but asked for the chamber. No abnormal signs were discovered in the heart, lungs, abdomen, and urine, and during the whole period of observation the temperature was never raised above 99° F. On October the 11th 2 oz. of clear cerebro-spinal fluid were obtained by lumbar puncture; this fluid was sterile and contained no excess of cells.

After admission he gradually improved, became less irritable, and soon began to take interest in his surroundings. The burns healed rapidly; the paresis of the leg soon cleared, and the signs of facial involvement disappeared before discharge. Gradually also a certain amount of power of movement returned in the left upper extremity. On November the 14th he was discharged to a convalescent home; at this time he walked well, and was able to use the left upper extremity in feeding himself. Whilst still in the country, on December the 5th, 1910, he became drowsy, refused food, and developed copious otorrhœa on both sides; the temperature rose to about 103° F., and the glands behind both mastoid processes enlarged and became tender. He was re-admitted to the London Hospital on December the 17th, 1910, and remained an in-patient until January the 5th, 1911. On discharge he showed a characteristic left-sided hemiplegia, affecting chiefly the upper extremity. The left leg was slightly spastic, but the left upper extremity was in general hypotonic, although at times mobile spasms of the distal portion of the extremity were observed.

Since this time he has been constantly under observation. In September, 1911, he became subject to "fits." These attacks always have begun in the affected left arm and thence spread progressively to the forearm and hand; frequently the whole of the left half of the body is involved, and occasionally consciousness is lost in a generalised convulsion. The attacks occur at irregular intervals, and usually several occur together. On December the 21st, 1911, he was again admitted to the London Hospital. The attacks, which I witnessed at this time, were characteristically Jacksonian, and affected the left shoulder, left arm, left forearm, left hand, and left leg; consciousness was not lost. Since this time the fits have continued. In December, 1911, the muscular development and the length of the bones of the left upper extremity were very similar to those which he now presents, and the left upper extremity was proportionately smaller than the other extremities; the head was asymmetrical, and distinct paresis of the left half of the face was present, but on protrusion the tongue came out straight. Ankle clonus and a Babinski extensor response were present on the left side. Since this time the left upper extremity has grown little, if at all, either in length or in diameter.

On January the 29th, 1915, he again came under observation, and was admitted to the Hospital for Epilepsy and Paralysis, Maida Vale, complaining of "bouts of fits." In each fit movements are seen to begin in the region of the left elbow, and spread thence to the left shoulder and left hand, and also to affect the joints of the left lower extremity and the muscles of the left side of the face. Consciousness is rarely lost. After each fit voluntary power over the left half of the body is much diminished. In addition to these Jacksonian convulsions he also suffers from frequent momentary attacks of *petit mal*.

The patient is a small, undersized boy, aged 7¾ years, weighing

2 st. 13 lb. He is observant and fairly intelligent. The head is asymmetrical, its circumference is 19 in., the bimeatal diameter 13 in., and the distance from nasion to inion measures $13\frac{1}{4}$ in. The left upper extremity in every proportion is much smaller than the right. The under-development is most noticeable in the region of the upper arm and shoulder. There is no shortening of the left lower extremity. The muscles of the left upper extremity are, in general, hypotonic, but occasional waxing and waning of muscular tone can be observed. The deep reflexes on the left half of the body are increased; the knee-jerk is exaggerated, ankle clonus can be elicited, the wrist- and elbow-jerks are brisk and the left plantar response is extensor. Abdominal reflexes are present on both sides. No sensory interferences can be demonstrated. The left hand and wrist are always cold, blue, and clammy, and the left foot and ankle tend to be cyanotic. The action of the sphincters is normal. The pupils react normally to light and accommodation. Ptosis, nystagmus, and diplopia are not present. The furrows on the left face are less definite than on the right, but all voluntary and emotional movements are symmetrical. The movements of the palate, larynx, and tongue are unaffected. The Wassermann reaction in the serum is negative.

MEASUREMENTS.

	Left. Inches.	Right. Inches.
Upper extremity—		
Acromion—tip of middle finger	$18\frac{7}{8}$	20
Acromion—olecranon	$7\frac{3}{4}$	8
Olecranon—styloid process of ulna	6	$6\frac{3}{4}$
Wrist—tip of middle finger	$5\frac{1}{8}$	$5\frac{1}{4}$
Arm—		
Circumference at olecranon	$5\frac{1}{8}$	$5\frac{3}{4}$
Circumference 2 in. above olecranon	$5\frac{3}{8}$	$6\frac{1}{8}$
Circumference 4 in. above olecranon (at rest)	$5\frac{5}{8}$	$6\frac{1}{4}$
Circumference 4 in. above olecranon (in flexion)	$5\frac{5}{8}$	$6\frac{1}{2}$
Circumference round axilla	10	$10\frac{1}{2}$
Forearm—		
Greatest circumference of forearm	$5\frac{5}{8}$	$6\frac{1}{2}$
Circumference 2 in. below condyle	$5\frac{1}{8}$	6
Circumference 4 in. below condyle	$4\frac{1}{4}$	$4\frac{3}{4}$
Greatest circumference of wrist	$4\frac{1}{4}$	$4\frac{1}{2}$
Glove-circumference of hand	$5\frac{1}{4}$	$5\frac{1}{2}$
Chest—		
Circumference of chest at level of nipple	$11\frac{1}{2}$	12

	Left. Inches.	Right Inches.
Lower extremity—		
Anterior superior iliac spine—internal malleolus	20⅝	20⅝
Thigh—		
Circumference just above patella.	8½	8½
Circumference 2 in. above patella	9⅛	9⅛
Circumference 4 in. above patella (scar)	10½	11
Circumference 6 in. above patella (scar)	11⅜	11⅞
Leg—		
Circumference 2 in. below patella	7⅝	7⅝
Circumference 4 in. below patella	7⅜	7⅜
Circumference 6 in. below patella	5⅞	6

COMMENTS.

The nature of the original illness in this child is still doubtful. In September, 1910, a diagnosis of polioencephalitis cerebri was made, yet at this time the absence of any cellular excess in the sterile cerebro-spinal fluid mitigated against such an opinion. The history of otorrhœa and the subsequent episodical attacks of aural trouble, however, seem in favour of the diagnosis of some local septic cerebral trouble consequent upon chronic otitis media as the original cause of the hemiplegia. Polioencephalitis and poliomyelitis are now recognised to be due to the same small coccoid micro-organism which Noguchi and Flexner have succeeded in cultivating in artificial media, and the present state of the patient might have suggested that the diagnosis of polioencephalitis was correct, and that the condition which the patient now exhibits was due to the effects of a disease which in 1910 affected both the cortex cerebri and the grey matter of the spinal cord. That this opinion is incorrect is, I think, proved by the occurrence of attacks of Jacksonian convulsions starting in the least developed portions of the left upper extremity. The difference in the volume and size of the muscles of the two upper extremities in this case as shown by the hemiplegic signs and a study of the history is due to slowness of development in a limb which is the subject of an upper motor neuron lesion, comparable with the trophic so-called disuse atrophy which is seen in adult subjects of hemiplegia. In this patient the precentral cortex of the motor area was affected only locally, with the consequence that the asymmetry is only noteworthy in the upper extremities.

NOTE ON SUPPURATIVE PAROTITIS FOLLOWING PNEUMONIA.*

By J. Porter Parkinson, M.D., M.R.C.P.,
Senior Physician, Queen's Hospital for Children.

A boy, aged 3 years, was admitted to the Queen's Hospital for Children on January the 2nd, 1915. He had been ill for a week with fever and cough. He had always been a weakly child; he had whooping-cough at four months and pneumonia when one year old. He was the elder of a family of two. The family history was healthy.

On admission there were signs of resolving pneumonia in the upper lobe of the left lung with harsh bronchial breathing at the base of the chest on the right side. The temperature was 99·5° F., pulse 108, respiration 24, heart, abdomen, and throat normal. On January the 7th the temperature rose to 104°, without any fresh signs in the chest; but next morning there was a hard, firm, and tender swelling in the right parotid region, and on the next day the overlying skin was red and œdematous, but no fluctuation was felt. On the following day, January the 10th, a deep incision below the lobe of the ear reached an abscess, and a small quantity of thick pus was removed. Films from this showed pneumococci and a few staphylococci. A tube was left in the wound, and the temperature, which had kept continuously about 103° F., fell to normal. Recovery was uneventful, and was practically complete when the child developed measles on January the 23rd, and had to be removed to the infirmary. I have considered this case worthy of record on account of the rarity of parotitis following pneumonia and due to the pneumococcus. Apparently the infection travelled by the blood stream, as there was no morbid appearance in the mouth, and the child never coughed up sputum, so it is unlikely that the *materies morbi* travelled up the duct.

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* The case was reported to the Section for the Study of Disease in Children of the Royal Society of Medicine on March the 26th, 1915.

A CASE OF MYELITIS IN A CHILD.

By Hugh T. Ashby, B.A., M.D.Cantab., M.R.C.P.Lond.
Visiting Physician to the Manchester Children's Hospital, Pendlebury, and to the Salford Royal Hospital; Physician for Children to the Manchester Board of Guardians.

The patient was a boy, aged 5½ years, who, previous to being admitted to the Children's Hospital, had complained of vague pains in the chest. The parents also noticed that he was slowly losing the use of his legs, and on admission he was quite unable to move them. The family history was good, and previous to the onset of the illness he had always been healthy. He had not had any of the infectious fevers. When sent by his doctor there was complete paralysis of both legs and back, with anæsthesia extending from the toes up to a line drawn round the chest just below the nipples. The knee-jerks were much exaggerated, and there was a Babinski sign present on both sides. The abdominal reflexes were absent. There was no optic neuritis and no impairment of the mental power. The upper extremities and neck were unaffected. The urine was normal, but continually dribbling away, and there was also incontinence of fæces during his stay in hospital, and up to the time of death he complained of vague pains in the chest and in the upper abdomen, but his general condition remained the same till just before he died.

There was only a slight rise of temperature on and off throughout the illness, but just before death he had hyperpyrexia. He had a small bed-sore on admission to hospital, which, however, soon healed. The heart and lungs were normal. After three weeks, the anæsthesia, which had remained at the same level, began to increase upwards, and he became rapidly worse, no doubt due to the vital centres becoming affected. Unfortunately no post-mortem examination was obtained.

Most cases of myelitis in children appear to follow one of the infectious fevers, none of which he had had, however. There was no improvement with potassium iodide, no family history of syphilis, and the Wassermann test was negative. There was no spinal caries nor injury, and the case was quite unlike anterior poliomyelitis or a spinal growth. The disease seemed to spread up the cord quickly at first, became stationary for a time, and then advanced till the vital centres were affected.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, March the 26th, 1915.

The President, MR. T. H. KELLOCK, *in the Chair.*

Case of the Atonic Form of Cerebral Diplegia (Foerster).—Dr. F. E. BATTEN and Dr. W. H. VON WYSS showed a child, aged 3 years, whose case they had described in the BRITISH JOURNAL OF CHILDREN'S DISEASES, 1915, xii, p. 68.

Four Cases of Ichthyosis in a Family of Six Children.—Dr. E. G. L. GOFFE.—The dry, scaly condition of the skin began to show itself about two months after birth in each of the children affected, who were 10 years, 6 years, 3 years, and 8 months respectively.

The father's skin was smooth, and the father's only sister had a smooth skin.

The mother's skin was smooth. Her two sisters also had smooth skin. One of the mother's brothers had a smooth skin; the other had a dry, scaly skin. This brother had five children, and all of them had smooth skins.

Dr. GOFFE also showed two cases of ichthyosis in a family of four children.

Ichthyosis associated with Long-standing superficial Ulceration of the Tongue.—Dr. J. L. BUNCH.—The patient, a boy, aged 12 years, had had generalised ichthyosis since infancy. Chronic glossitis with superficial ulceration had been present since birth, but varied somewhat in severity at different times. His mental capacity was somewhat deficient.

Case of Pulmonary Regurgitation.—Dr. EDMUND CAUTLEY showed a girl, aged 15 years, with a history of scarlet fever at the age of 9 years, and that a heart affection was then recognised. Last August, and again in December, she had some pain and swelling in the hands and ankles. On December the 29th she took to bed, where she remained on account of shortness of breath, for which she was admitted to the Metropolitan Hospital on January the 8th, the pain having subsided a week previously. During her stay in hospital there had been no evidence of rheumatic fever, no fever, and no change in the cardiac signs. She was rather high-coloured, big, strong, and well developed. Her periods occurred every two weeks.

Enlargement of the right ventricle was shown by percussion, cardiogram, and skiagram. Over the pulmonary area there was a long, loud diastolic murmur; most marked over the third and fourth left interspaces near the sternum, and 2 in. to the left thereof, and then rapidly lost in all directions; sometimes heard faintly along the right edge of the sternum. There was no thrill. The pulse was rather small and had no "aortic" character, and varied from 68 to 100 per minute. A blood count on February the 12th yielded 5,270,000 red and 8600 white cells. All the facts appeared to support the diagnosis of simple pulmonary regurgitation, except that the skiagram indicated displacement of the apex a little downwards and to the left as in aortic regurgitation, but there was no evidence of the hypertrophy usually associated with aortic regurgitation and such a loud murmur. Both the ætiology and prognosis of this case were of interest. Dr. H. H. Brown, of Ipswich, had told the speaker that he had under his charge a schoolboy with pulmonary regurgitation who appeared in good condition and health, was good at all sports, and had won the competition for staying under water and collecting eggs a few years ago.

Ectromelus with absence of Pectoral Muscles on the Right Side.—Dr. Edmund Cautley.—The child was aged 1 year. The metacarpal bones and phalanges of the right hand were absent, together with the pectoral muscles on the same side. There was absence of the sternal ends of the second, third, fourth, and fifth ribs. The parents were healthy, and there was no family history of deformity.

Deformity and Wasting of the Hands with Deformity of the Feet.—Dr. Edmund Cautley showed a girl, aged 7 years, a patient at the Belgrave Hospital for four years. During 1911 she attended for styes, enlarged tonsils, general bronchitis, and occasional enuresis nocturna. In November her feet were encased in plaster for extreme flat foot. In February, 1912, special boots, stiffened on the inner side, were prescribed. Tonsils and adenoids were removed in January, 1913, and the cervical glands were enlarged during the next two months. New boots were ordered in August, 1913, and about this time impairment on the right apex was noted. Recently she had been at Herne Bay for six months for tuberculosis at both apices.

At present there was impairment of resonance at the apices, mostly on the right side, with signs indicative of enlarged glands in the mediastinum on that side, but none of active pulmonary disease. The hands showed considerable wasting, ulnar deflection, and unusually long fingers, with a little clubbing of some of them—(?) a pulmonary osteoarthropathy. Both feet showed a little equinus: the left one was very flat, while the right showed extension of the proximal phalanges and flexion of the distal phalanges.

Sclerodermia with Congenital Contractures and other Defects in an Infant.—Dr. E. A. Cockayne showed a male infant, aged 1 year, first child of healthy parents; premature. The child was first seen five months ago, and found to have congenital hydrocephalus, deformity of both ears, marked congenital contractures of the fingers and toes, and less marked contractures of both wrists, left elbow, and both knees. Contraction of the skin round the nose and mouth was also noticed. A Wassermann reaction proved negative.

On February the 9th, 1915, the mother noticed that the skin on the outer sides of both thighs was very hard. This condition appeared suddenly and painlessly. There were large, symmetrical areas of thickened skin on the outer aspect of each thigh. The skin was not changed in colour, did not pit on pressure, and was not tender. The surface was nodular. The skin over the abdomen was affected similarly, but to a much less degree. Since it was first noticed there had been no change.

Case of Inherited Syphilis with Wassermann Reactions.—Dr. Reginald Miller showed a boy, aged 2 years, well nourished. First child, no miscarriages, full term, breast fed.

Father: Infected December, 1911. Treated at Lock Hospital with mercury until April, 1912; then two doses of salvarsan. Wassermann reaction not tested, as he failed to report. In August, 1912, no fresh symptoms; he reported and was found to give a weak positive reaction. He then received eight doses of mercury intra-muscularly. In April, 1914, reaction negative.

Mother: No symptoms throughout. Conception about June the 24th, 1912.

Child: Born March the 22nd, 1913. At the age of five weeks, epiphysitis of left elbow. Was treated with grey powder for seven weeks, combined with inunction (two weeks). Treatment then stopped for two months, owing to doubt in diagnosis. At the age of five months he developed scaly rash on buttocks. Was given antisyphilitic treatment, including inunction, from fifth to fifteenth month. None since.

Wassermann reactions of child and mother (full test): At five weeks, child and mother negative; at five months, child and mother positive; at nine months, child and mother positive; at eleven months, child negative, mother (after salvarsan and mercury) negative; at fifteen months, child and mother negative; at twenty-three months, child and mother negative.

Case of Chronic Polyarticular Arthritis commencing in a Child at the age of 2 years 4 months.—Dr. E. G. Fearnsides.—The patient was born December, 1911. Until April, 1914, he was a healthy child. He was breast fed for twelve months, walked at the age of eleven months, and began to talk when aged thirteen months. In April, 1914, he became ill in himself, and subject to attacks of sweating; shortly after this the small joints of his fingers swelled, his knees enlarged, and he became unable to walk.

He first came under observation on August the 28th, 1914. At that time he was pale, flabby, wasted, and unable to use his hands, or to walk. There were considerable muscular wasting of the extremities, and great periarticular swelling of the joints of the fingers, wrists, knees, and ankles, and apparently some enlargement of the bones. The lymphatic glands were not enlarged, and the spleen could not be felt. He sweated freely. The tonsils were not enlarged. No abnormal signs could be discovered in the heart, lungs, or abdomen, and the urine contained neither albumin nor pus.

Under treatment with massage and grey powder by the mouth he had continuously improved. By November, 1914, he was again able to walk. The anæmia gradually improved, and the periarticular swelling of the knees, ankles, wrists, and fingers gradually diminished. The Wassermann reaction in the serum was negative.

At the present time a blood examination showed: Red blood cells 5,450,000 per cubic millimetre, white blood cells 11,500 per cubic millimetre, hæmoglobin 64 per cent., colour index 0·8, with the differential count—polymorphonuclear cells 48·6 per cent., small lymphocytes 38·4 per cent., large mononuclear cells 10·4 per cent., transitional cells 1·2 per cent., eosinophiles 1·2 per cent., and mast cells 0·2 per cent.

Case of Pseudo-hypertrophic Muscular Dystrophy associated with Amentia.—Dr. E. G. Fearnsides.—The patient, who was aged 8 years, was a characteristic instance of pseudo-hypertrophic muscular dystrophy. He could not sit up straight, nor raise himself from the recumbent to the sitting posture without the aid of his hands. He stood unsteadily on a wide base, and walked with a waddling gait. He could not raise himself from a sitting to an erect posture. When held by the axillæ he slipped through his shoulders. The muscles of the calves, the infraspinati, the outer part of the lumbar mass of the erector spinæ and the axillary portions of the latissimus dorsi muscles were symmetrically hypertrophied and defective in power. The pectoralis major, deltoid, biceps, triceps, the lower half of the trapezius and the glutei, vasti, and anterior tibial muscles on both sides were small and paretic. The rhomboids, serratus magnus, and the distal muscles of the extremities were proportionately better developed. There was little lordosis. The grasps were feeble. The dorsiflexors of the ankles were weak, but there was little talipes equinus. The muscles of the neck were fairly developed and those of the face unaffected. The abdominal muscles appeared normal. The knee-jerks could just be obtained, and doubtful ankle-jerks were present. No plantar responses could be elicited. The abdominal reflexes were brisk. The fingers were long and tapering. The metatarsals were hyperextended, and the phalanges of the toes distally flexed. The extremities were usually cold; they sweated freely and showed cyanotic mottling of the skin. The cranial nerves were unaffected. Sensation and the action of the sphincters were normal. Vision was good, and the optic discs appeared healthy. Hearing, smell, and taste were unaffected. He had never been subject to fits or other forms of seizure. The head was irregularly shaped and measured 20 in. in circumference, 13½ in. from nasion to inion, and the vertical bimeatal distance was 13 in. The right frontal bone was prominent, and showed a curious bump surrounding a scar. The bridge of the nose, palate, and ears were well developed. He lolled with his tongue and constantly made grimaces.

Mentally he was backward. He could not read, did not know his alphabet, and could not state where he lived, his age, nor the ages of his brothers. He could only count up to four, and did not know how many twice two made. He did not know the value of money, and called a sovereign a halfpenny. He could name and knew the uses of common objects. He was interested in pictures, and could name the objects which they depicted. He was musical, and could whistle and sing.

There was no family history of myopathy. His father and mother were normal. The patient was the youngest of four children, and the other three were healthy. In walking and mentally he had always been backward.

Case of Pneumothorax.—Dr. Eric Pritchard showed a girl, aged 12 years, who had been brought to hospital on March the 4th, 1915, for sudden breathlessness, with some cyanosis and pain in left side of chest. She had complained of the pain off and on for three weeks, but had been going to school until the day she came to hospital. No cough, and no previous illness. On examination nothing abnormal was found in the chest; the heart was slightly dilated, but otherwise in the normal position. Patient was refused admission, and was taken home. She continued to complain of pain and was faint at times. Two days later she was admitted; temperature 100° F., pulse 104, respiration 28. Physical examination as before. She continued to complain at times of pain in the lower and posterior part of the left axilla, but was otherwise comfortable. On the fourth day the pain became severe, dyspnœa marked, colour pallid, temperature 103° F., respirations 64, and pulse 136. The heart's apex beat was in the fourth right space about 1 in. internal to the nipple line. The left side of the chest was immobile and distinctly full under the clavicle. The note was hyperresonant, breath sounds scarcely audible, vocal resonance and vocal fremitus absent; coin sound obtained. In four days' time the respirations had come down to 28, and the pulse to 96, while the temperature varied from 100° F. to 101° F.; the patient was quite comfortable. The note at the left base behind became dull, otherwise there was very little change in the physical signs.

Hydrocephalus and Spina Bifida with Deformity of the Legs.—Mr. Philip Turner.—The patient was a boy, aged 2½ years. The right foot was in a condition of talipes equino-varus, and there was bowing inwards of the right tibia. The knee-joint was normal in position, and the patella could be felt. The left foot was also in a position of talipes equino-varus, but the right thigh was externally rotated so that the popliteal space was directed forwards. The tibia was still further externally rotated, so that the foot, though actually in a position of marked equino-varus, was rotated outwards and the sole directed forwards.

Flexion of the knee was impossible, but hyperextension could be produced at an angle of 90°. The legs were not completely paralysed, though they could be moved but little. The child seemed intelligent, and the vision was normal. There was incontinence of urine and fæces. The X-rays showed that all the long bones were present except the left patella. The long bones were, however, unduly slender, and the epiphyses were enlarged and indefinite, though it was doubtful if there were any real pathological change. There was some evidence of periostitis of the left femur.

Note on Suppurative Parotitis following Pneumonia.—Dr. J. rter Parkinson (*v.* p. 141).

Abstracts from Current Literature.

Medicine.

Feeding the newborn ('*New York Med. Journ.*,' 1915, ci, *p.* 67).—**Herrman** advises putting the infant to the breast every three hours followed by feeding with 1½ oz. of 10 per cent. lactose. This just supplies the twenty to twenty-five calories per pound necessary to meet the energy requirment of the first few days. The result is a diminution of the average loss of weight from 11 to 6 oz., an increase from 35 per cent. to 65 per cent. in the cases regaining their birth weight after ten days, and there is never inanition fever. The advantage gained continues during the first month, and no disturbances were seen that could be attributed to this method.

J. Porter Parkinson.

Remarks on weaning ('*Journ. de Méd. de Bordeaux*,' 1914, lxxxv, *pp.* 229 and 245).—**E. Leuret** defines weaning as the period during which a food other than a woman's milk is given to the infant and which ends in the cessation of breast-feeding. The duration of lactation depends upon the suction of the infant and can last as long as this stimulus is exerted; it is in no way cyclical and its cessation between ten to eighteen months depends on the fact that other methods of feeding are then begun. Weaning should be undertaken when the mother's health deteriorates, as evidenced by the onset of anæmia, neuralgia, and menstruation; when the child's health is good, in the absence of hot weather, and never before a long sea journey. Sudden weaning is inadvisable, as it may cause a sudden fall of weight. Only about a third of present-day mothers can suckle their children advantageously up to the end of the eighth month. On the other hand, 90 per cent. can feed their children up to the fourth month and can continue to do so hereafter if breast is aided by artificial feeding. The substitution of some cow's milk at or about the fourth month is recommended as an antidote to the laxative effects of certain maternal milks. A teat with only one hole and without a valve should be used. Maternal feeding is usually abandoned because it is feared it may spoil the figure and that it interferes with conjugal relations. Neither of the objections is valid. Contra-indications to breast-feeding of an anatomical nature are very rare, but in true umbilication of the nipple breast-feeding is impossible. Excoriations and fissures, by their intense sensitiveness, at times result in weaning. Very occasionally, either the casein or the fat of the mother's milk causes diarrhœa. This can be remedied by alteration in the maternal diet. A general family history of tuberculosis is not a contra-indication to maternal feeding, nor are healed localised lesions, such as tuberculous diseases of the knee, glands, or spine. A case of a child successfully fed by a mother with a severe open pulmonary lesion is quoted as showing how little bad effect the milk may have on the child even when the health of the mother suffers from lactation. In acquired syphilis of mother or child, the latter must be weaned at once. As a general rule, women with cardiac disease should wean their infants, but where the lesion is compensated and does not require treatment, breast-feeding may be continued. The milk of eclamptic women is usually harmless, but in two instances the infants died from convulsions, and in a third death was due to nephritis and erysipelas. In lead poisoning, maternal feeding can be continued. In cases where opium and arsenic have to be given continually, resort must be made to artificial nutrition. Weaning may be advantageously delayed in premature children, in normal children it should be undertaken when the child's store of iron in the spleen and liver is exhausted. Maternal milk is poor in iron, but this defect can be remedied by taking meat-juice at the end of lactation. Christopher Rolleston.

An experiment in the collection of human milk for hospital and dispensary use (*'Arch. of Ped.,'* 1914, xxxi, *p.* 171).—**B. R. Hoobler** quotes Langstein and Hoerder to the effect that only 15 per cent. of marasmic infants die if feedings of human milk be given. The Social Service Department found out those mothers who had excess of breast milk and were willing to sell it. Such mothers are then examined clinically and their blood examined by Wassermann's method for syphilis. The woman is taught how to remove the milk by the breast-pump, and comes once or twice a day to the hospital, the number of visits depending on the amount of milk. The mother is paid fifty cents for each visit. The average amount of milk given at each visit is 10 oz. Each ounce costs five cents. The children of these wet nurses are kept under observation, and are found to suffer no ill-effects but to gain in weight and general appearance.

Christopher Rolleston.

The feeding of skimmed breast-milk (*'Journ. Amer. Med. Assoc.,'* 1914, lxiii, *p.* 1181).—**F. C. Neff** states that there are certain cases in which the temporary feeding of skimmed breast-milk is advisable until the digestive difficulties of the infant are over and a return to whole breast-milk is possible. This method of feeding is worthy of trial in the great class of infants with intestinal indigestion as manifested by abdominal distension, colic, fretfulness, loose green dyspeptic stools, failure to gain in weight through several weeks; in babies that have gastric and pyloric symptoms; in the eczema of infancy, and in the congenitally weak and premature infants. Skimmed breast-milk is a safe and digestible food, and is applicable whenever a fat-free milk is indicated. Human milk permits of simple cream separation and can usually be obtained for this purpose from the mother or wet-nurse. T. R. WHIPHAM.

Undiluted citrated milk in infant feeding (*'Guy's Hosp. Gaz.,'* 1914, XXVIII, *p.* 157).—**H. C. Mann** gives the results of a further three years of experience in the feeding of infants with citrated whole-milk, and the present paper may be regarded as a sequel to that noted in the BRITISH JOURNAL OF CHILDREN'S DISEASES, 1911, VIII, *p.* 503. An interesting modification of the usual method lies in the employment of equal parts of sodium and potassium citrate when more than eight grains of citrate are required to each feed. This is done with a view to the prevention of sodium retention. The potassium salt may produce free diuresis. Dr. Mann now employs citrate in the usual proportion of two grains to the ounce of milk, not, however, going above ten grains of citrate for any sized feed. He continues citration up to the age of ten or even eighteen months, the limit being very variable. He is not in favour of long-interval feeding. His very thorough investigations bring out two interesting side-issues on the milk supply of London. He finds that the percentage of fat in London milk is strictly looked to; only twice in eight years has he found samples to contain less than 3 per cent. of fat, while frequently it is 3·5 per cent. or even over. On the other hand, he finds that the delivery of short measure is very frequent. Dr. Mann gives the amounts of citrated whole-milk which he advises for infants of various ages. REGINALD MILLER.

Infant feeding with top milk (*'Med. Record,'* 1914, LXXXVI, *p.* 1043). —**J. H. Mabbott** discusses the advantages of top-milk feeding as against the employment of milk and cream mixtures. One advantage is that of cost, bought cream being comparatively expensive. The other chief advantage lies in the fact that, in New York at all events, cream which is bought as such is a day older than that obtainable from the milk supplied commercially. The author gives an account of the methods he has adopted in top-milk feeding and emphasises their simplicity.

REGINALD MILLER.

Cow's milk raw and heated (*'Med. Record,'* 1914, LXXXVI, *p.* 58).—Freshly drawn milk contains but few bacteria, but these multiply quickly so that in Washington the general milk supply contained twenty-two millions of bacteria in 1 c.c. Cooling is a specially important measure in diminishing the bacterial count. Pasteurisation does not affect milk either chemically, physically, or biologically, but on boiling changes occur in the taste, odour, and colour. It becomes more viscous owing to the coalescence of the fat globules. A film is formed on the surface, consisting of fat and protein matter. Calcium salts are precipitated and the milk becomes acid. Pasteurisation, unlike boiling, does not destroy the enzymes. Heated milk is said by some to be less digestible and to cause distinct constipation and loss of vitality among infants so nourished. Scurvy rickets is so rare as to be negligible. As to acute gastro-intestinal disorders, Park and Holt found that children reared on heated milk did far better than those who received milk raw. CHRISTOPHER ROLLESTON.

Observations on the 'Eiweissmilch' of Finkelstein and Meyer ('*La Pediatria,*' 1914, XXII, *p.* 405).—**E. Modigliani** conducted a very large number of experiments on children with this preparation (albuminous milk) with the following results: (1) It sometimes causes intolerance and vomiting, which prevents its administration. (2) In the absence of this, it had a marked and lasting value in artificially fed infants with intestinal disturbance. (3) In cases of loss of weight it had no good results, even after forty-five days. (4) As supplementary to breast feeding it gave good results. (5) Considering its long and complicated preparation and its high price, as well as technical difficulty in its administration, it had no advantage over butter-milk or malted milk. (6) Used as a food for normal healthy children, the results were very unfavourable, probably from causing intoxication by hetereogenous albumin. VINCENT DICKINSON.

Sterilised milk and rickets ('*La Clin. Infant.,*' 1914, XII, *p.* 431).—**G. Variot,** whose extensive experience of rickets is almost unique, has given us the last word on this disease in a masterly essay, which should be read by all those interested in children's diseases. We have only space to notice his views on the part played by diet as an ætiological factor. It has been asserted that sterilisation of the milk has a deleterious effect on its nutritive value, and that infants reared upon it often become rachitic, that raw milk preserves its enzymes and living ferments, and has a great advantage over milk modified by heat. Variot says that far from this being the case, raw milk causes digestive disturbances and even rachitic manifestations, which are avoided by the use of milk treated to 108° C., and by milk superheated and homogenised. Having used for more than twenty years, at the Hospice des Infants Assistés, enormous quantities—more than a million litres—of milk thus treated, he affirms that complete sterilisation of milk by superheating does not produce rickets. Doubtless, rickets usually of a benign type appears in children who are fed on broth too early or on excessive quantities of milk, but with judicious feeding these children do not become rachitic, or at most only have slight costal deformity, there are no deformities of the limbs, their height is normal, they walk at thirteen to fourteen months, and have no abdominal distension. After an experience of more than ten thousand children, Variot claims the right to deny that sterilisation of the milk plays any part whatever in rickets. Over-feeding with milk of good quality produces gastro-intestinal troubles, and thus may cause rickets; it is probable that florid types of the disease come under this category. But it is especially complete privation of milk that is the principal cause of grave forms of rickets with hypotrophy. Paps, broths, and starchy foods, with or without milk, are potent factors in its production. Variot recalls whole families made rickety by such erroneous feeding, and when it occurs in twins it exists in the same degree and with the same distribution, for the feeding has been identical in both. The majority of rachitic infants have had, or still have, gastro-intestinal troubles following hygienic faults. VINCENT DICKINSON.

Infantile scorbutus ('*Boston Med. and Surg. Journ.,*' 1914, CLXX, *p.* 504).—**J. L. Morse** found that 20 per cent. of the cases were fed on condensed milk or proprietary foods mixed with water and 50 per cent. on proprietary foods or condensed milk. In the cases in which milk was used either with or without proprietary foods, the mixture was given raw in 3 per cent., pasteurised in 16 per cent., boiled, scalded, or sterilised in 81 per cent.

F. R. B. Atkinson.

Infantile scorbutus in a child fed on homogenised milk (*'Arch. de Méd. des Enf.,'* 1914, xvii, *p.* 66).—**G. Schreiber** and **François** describe this case in a boy, aged 4 years. The disease is rare after the second year.

F. R. B. Atkinson.

The influence of starch on infant digestion (*'Journ. Amer. Med. Assoc.,'* 1914, lxiii, *p.* 1375).—**T. S. Southworth,** after a lengthy consideration of the subject, gives it as his opinion that while it is an established fact that even young infants are prepared to digest moderate quantities of boiled starch, the indication for its use appears to lie in those suffering from disturbances of digestion and nutrition. With these, the chief end subserved by such addition to their food is not solely to nourish the infant, but to promote nutrition by making possible a more orderly digestion and absorption of its main nutriment, milk. T. R. Whipham.

The effect of sugars on the gastric secretions in infants (*'Arch. of Ped.,'* 1914, xxxi, *p.* 749).—**De W. Sherman** and **H. R. Johnes,** as the result of analysing the gastric contents of thirty infants, regard the following as the normal: Free HCl 2·20; combined HCl 4·75; total acidity 8·85. Examining the effects of the ingestion of 6 per cent. sugar solutions they found that cane sugar is only slightly more stimulating to the infant stomach than milk sugar. Malt sugar, on the other hand, is at least twice as stimulating to gastric secretion as either milk sugar or cane sugar. The authors also found that the milk sugar solution was passed on from the stomach about twice as quickly as were the other sugar solutions; but they hesitate to accept this as correct on the grounds that if milk sugar really stimulates the motor activity of the stomach it would probably also stimulate the secretory functions, which as the results above quoted show is not the case in comparison to malt sugar in the form of dextri-maltose.

Reginald Miller.

The significance of the mineral salts in the digestive disturbances of infants (*'Arch. of Ped.,'* 1914, xxxi, *p.* 259).—**C. I. Wood** finds that the percentage of absorption and retention of salts in woman's milk is higher than in cow's milk. The salts of cow's milk are not in the same organic combination as the salts in woman's milk. The whey in woman's milk is a better menstruum for the fat and casein of cow's milk, than the whey of pure cow's milk. If the whey from cow's milk be added to the fat and casein of woman's milk, the infant thus treated does not thrive well.

F. R. B. Atkinson.

Salt fever and sugar fever in pædiatrics (*'Arch. de Méd. des Enf.,'* 1914, xvii, *p.* 757).—**F. Figueira,** from experiments on rabbits and infants at the breast, concludes that injections of solutions of NaCl, lactose, and glucose have no pyretogenous action provided the substances are pure, that the water used for the solution has been doubly distilled in a glass vessel, that it has been sterilised in the autoclave and injected while still warm (*cf.*

British Journal of Children's Diseases, 1913, x, *p.* 229, and 1914, xi, *p.* 121). J. D. Rolleston.

Fat indigestion in infants (*'Boston Med. and Surg. Journ.,'* 1915, clxxii, *p.* 167).—**C. Hunter Dunn** gives an abstract of the result of his study of this group of cases. He summarises the typical feature of the group as "inability to gain weight without fat, and inability to gain with it." He does not find the condition is brought about by previous over-feeding with fat, but rather by overfeeding with carbohydrate which may result in a secondary failure of the power to digest fat. Chronic diseases, particularly tuberculosis, are associated with fat indigestion. He does not think that the inability to digest fat can be well compensated for by increasing the other constituents of the food, and gives a diet low in fat, average in carbohydrate, and comparatively rich in protein. He regards maltose as possibly helping fat digestion, and prefers its use to that of lactose. A micro-chemical examination of the stools for fat is indispensable for the management of these cases. Excess of fat or soap in the stools may be present without clinical symptoms of anything being wrong; nevertheless, there is a danger of a sudden upset in such cases. Free fat in the stools is always a danger sign. In treatment, breast-milk is the best line to adopt; without it we must be prepared for a period of loss of weight which may be prolonged. Reginald Miller.

The nutritive diseases of infancy (*'Edin. Med. Journ.,'* 1914, ii, *p.* 469).—**J. S. Fowler** reviews the nutritive diseases of infancy and gives an account of Finkelstein's work on this subject. The signs of normal healthy nutrition are three: (1) Steady gain in weight; (2) a steady temperature curve, which shows that the food is being burned up properly; and (3) a wide tolerance for alterations in quantity and quality of food. The signs of nutritive disturbance from overstepping the limits of tolerance are: (1) An irregular weight curve, showing unequal gains, losses, and stationary periods; (2) an irregular temperature curve, showing slight rises (99° to 99·5° F.); and (3) the so-called "paradox-reaction" to food. By the paradox-reaction is meant the fact that if to an infant whose weight has become stationary there is given an increased quantity of the food on which he has hitherto thrived fairly well, the result is an aggravation, not an improvement, of the symptoms. The weight may fall, or fever and toxic symptoms (diarrhœa and vomiting) may occur. No attempt has been made to refer at length to Finkelstein's methods of dieting. The main points which seem likely to prove of practical use are: (1) The diagnosis of nutritive disturbance depends largely on the effects of treatment, and this in its turn ought to take account not only of the symptoms, but of the history of the previous diet; (2) the group of cases in which wasting is the chief feature is often due to over-feeding with milk, and the indication is to reduce the fat and add a carbohydrate, such as starch or maltose; (3) in dyspepsia and diarrhœa the carbohydrate should be kept low, and maltose used instead of milk sugar; (4) the indigestibility of casein has been greatly over-estimated. J. Allan.

The gaseous metabolism of infants (Report published by The Carnegie Institution of Washington, 1914).—**Francis G. Benedict** and **Fritz B. Talbot** claim that the heat production of infants confined in calorimeters does not vary directly with the body-surface as is generally supposed, nor with the body-weight, age or length, but, other conditions being equal, more closely with the pulse-rate, which their observation show is more or less dependent on muscular activity. These findings, to a certain extent, explain the very remarkable differences in the number of calories afforded by infants displaying different degrees of activity. The authors, however, have attempted to determine the basal metabolism of infants under conditions of rest, and even under these conditions they find that the heat given off by any particular infant does not vary directly with the surface area on a basis of the law of cooling bodies, but much more closely with the mass of active protoplasm. On these grounds they explain differences in the basal metabolism of fat and lean infants, it being assumed that fat infants possess relatively small masses of active protoplasm. The mechanism whereby the pulse-rate and muscular movements of the infants confined in the calorimeters are recorded shows very great ingenuity. It does not appear, however, that habits of metabolism have been taken into consideration in these experiments; it would appear justifiable to suppose that "quality" of metabolism as well as quantity of active protoplasm must influence the output of heat. And these habits of metabolism should have a relationship to the past experiences of the infant both as regards diet, clothing, and environmental temperatures.

ERIC PRITCHARD.

Reaction to iodine of the infants' fæces ('*Riv. di Clin. Pediat.*,' 1914, XII, *p.* 321).—**F. Strina** examined this reaction, in which a blue colour is obtained with iodine, in fifty-five infants in various states of health and conditions of feeding. The reaction was very sensitive considering the number of exciting causes and the scarcity of carbohydrates in the food in breast-fed infants. Although lactic and butyric fermentation takes place in normal digestion, it is completely neutralised by subsequent digestive processes, and hence the author admits that in a wide sense a positive reaction in these cases shows that there is some pathological action in the digestive system represented by a diminished transformation of carbohydrates. In definite pathological conditions, *e.g.*, intestinal putrefaction, which is absent in the infant at the breast, or green diarrhœa, this reaction shows the intensity of the morbid process and is wanting in slight cases. It also serves to indicate whether modifications made in a child's diet during any illness are well tolerated or not. The author, in conclusion, admits that, owing to the simplicity of the technique, the reaction may be habitually employed to afford some idea of the functioning of the digestive system of the infant and to ascertain by repeated examinations whether changes of diet are well borne.

VINCENT DICKINSON.

The occurrence of bacterium Welchii (Bacillus aerogenes capsulatus) in the dejecta of children ('*Bull. Johns Hopkins Hosp.*,' 1915, XXVI, *p.* 27).—**J. H. M. Knox, jun.**, and **W. W. Ford.**—Out of eighteen children, aged from two to twelve years, suffering from minor ailments, but without marked intestinal disturbance, *B. aerogenes capsulatus* was isolated on first examination in nine cases, and on subsequent examinations in the rest. In seven breast-fed infants the dejecta did not show this organism, though seven to twenty tubes were inoculated in each case. This proves that *B. aerogenes capsulatus* must be regarded as a normal and constant inhabitant of the intestinal tract in children, except in breast-fed infants.

J. D. ROLLESTON.

The frequency of Proteus vulgaris in infantile summer diarrhœa (‘*Gazz. internaz. di Med., Chir., etc.*,’ 1914, *p.* 977).—**L. Maccone** isolated *Proteus vulgaris* from the diarrhœic stools of twenty out of thirty-one infants —*i. e.* in 66 per cent. In two cases it was associated with *B. pyocyaneus*, in one case with *B. fluorescens non liquefaciens*, and in a few cases with *B. coli* or coliform organisms, but never with the typhoid bacillus. Proteus diarrhœa did not show any clinical features to distinguish it from diarrhœa due to *B. coli*, coliform bacilli, or other organisms. In one-third of the cases it followed the ingestion of fruit or vegetables. This confirms the frequency of proteus toxi-infection following a not exclusively milk diet in the first year of life. J. D. Rolleston.

Heat and summer diarrhœa (‘*Am. Journ. Dis. Child.*,’ 1913, vi, *p.* 289).—**J. Zahorsky** begins his paper with a historical *résumé* of the views on infantile diarrhœa. He then tests the hypothesis that heat alone is the causative factor. Latitude has no influence, the death-rate in Jacksonville, a southern city, being lower than in New York. It is shown that while many hot days have a high death-rate, there are other equally as warm days in which no corresponding increase in the deaths is found. Cool periods in the autumn may be attended by a rise in the morbidity and mortality. In the aggregate, however, the excessive heat is inimical to infants sick with gastro-enteric diseases. Excessive heat may cause death from heat-stroke, but in the cases of death from this cause no evidence of acute gastro-intestinal infection could be elicited. Thermic fever and diarrhœa are, therefore, distinct diseases. The temperature of dwellings in Chicago was shown by Helmholtz to be no great factor in causing diarrhœa. Older infants from six to fifteen months are found to suffer most from hyperthermia, while younger infants did not react. This was attributed to the fact that the older infants received undiluted cow's milk, which predisposes to hyperthermia. Pasteurisation and refrigeration of milk have stopped the former epidemics of diarrhœa in foundling homes. The conclusion is that heat alone by its direct effect on the organism does not produce the great increase in morbidity and mortality. Heat produces and increases the virulence and activity of micro-organisms and of endogenic and ectogenic toxic substances of unknown nature. Christopher Rolleston.

A note on the prognostic value of Schmidt's test in summer diarrhœa of infants (‘*Med. Journ. of Austral.*,’ 1914, i, *p.* 491).—**J. S. Pearson** found that in 2000 cases he never lost one in which the test continued or after treatment became positive, and also that no case was ever cured in which the test continued negative. The test is as follows: a teaspoonful of fæcal matter is placed in a wide test tube, a little sterile water added and well stirred. The tube is then filled from four to six times the volume with a saturated solution of $HgCl_2$, the mixture well shaken and allowed to stand for twelve hours. If the fæces be normal they become bright red: if unchanged bile pigments are present the colour becomes green. If no change occurs bile is absent. F. R. B. Atkinson.

Infectious diarrhœa (‘*Am. Journ. Med. Sci.*,’ 1915, cxlix, *p.* 17).—**J. L. Morse** attributes diarrhœa to the following causative micro-organisms: (1) The dysentery bacillus, all forms, (2) the gas bacillus, (3) *B. coli*, (4) *B. pyocyaneus*, and (5) streptococci. The pathological lesions are usually limited to the large intestine and the lower two or three feet of the small intestine. They consist of catarrhal inflammation, hyperplasia of Peyer's patches, and superficial ulceration with more rarely the formation of a pseudo-membrane. The mesenteric lymph nodes are enlarged. The onset is usually sudden. The stools at first contain fæcal matter, which is replaced in a few days by blood and mucus. Their reaction is alkaline. The abdomen is usually sunken and there is no spasm of the abdominal muscles. In some instances the liver and spleen enlarge, the hypertrophy of the former is sometimes considerable. The temperature is always elevated from 100° to 102° F. The blood shows a moderate polynuclear leucocytosis up to 20,000. If the stools are green this colour may be due to *B. pyocyaneus* or to bile. If to the former the green colour disappears on the addition of nitric acid, if to the latter the same re-agent produces Gmelin's colour test. The gas bacillus can be recognised by adding a small portion of the stool to a test tube of milk which is boiled to destroy non-spore forming bacilli and then incubated at body temperature. If the gas bacillus is present the casein is largely dissolved, and what is left is pinkish in colour and filled with holes ; only in a well-equipped laboratory can the dysentery bacilli be recognised. Infectious diarrhœa is diagnosed from intussusception by acute pain and shock in the latter and not in the former. Fæcal matter is usually contained in the diarrhœic stools, but not in those of intussusception. There is no distension of the abdomen and no spasm of its muscles in diarrhœa. A tumour per abdomen or rectum can be felt in intussusception. From simple indigestion acute infectious diarrhœa is diagnosed by the presence of fever in the latter condition. The prognosis is unfavourable where there is high fever with much blood in the stools. Restlessness, vomiting, and convulsions are also of evil import. The bowels should first be cleared with castor oil. If this be vomited calomel and sodium bicarbonate should be exhibited in small doses half hourly until 1 gr. of calomel has been given. The lower bowel should be irrigated once or twice in the twenty-four hours with normal saline solution. The most important element in the treatment of infectious diarrhœa is the diet, which depends upon the variety of the infecting micro-organism. The micro-organisms can be divided into two groups as far as the determination of the diet is concerned : (1) The gas bacillus and allied organisms ; (2) the dysentery bacillus and the other organisms except those mentioned in (1). Group No. 2 produce harmless products from carbohydrates and toxins from proteins. The products of carbohydrate metabolism have, moreover, an inhibitory action upon the development of dysentery bacilli. In consequence of this lactose is given in 5 to 7 per cent. solution in water and after a day or two in barley water, as soon as the condition improves protein is given in the form of casein or whey. No fat must be given till convalescence is well established. As glycogen is rapidly used up in these conditions, infusions of dextrose 2½ per cent. strength in normal saline is recommended. Three or 4 oz. are given four or six hourly. In infections caused by the gas forming bacillus the carbohydrate must be cut down, while, on the other hand, lactic acid, which inhibits the growth of the gas forming bacillus, must be produced. Either unheated buttermilk or a fat free mixture containing 3 to 4 per cent. of milk sugar and from 1·5 to 2·5 per cent. of protein ripened with lactic acid forming organisms. If blood or pus persist in the stools, silver nitrate irrigations—6 to 16 oz. of a 2 to 3 per cent. solution—should be injected into the bowel, which has been previously irrigated with a solution of sterile water. For pain and tenesmus injections of 2 oz. of a starch solution of the strength of 1 dr. to the ounce, to which are added 3 to 5 drops of laudanum, can be injected into the bowel. If water is vomited 4 to 6 oz. of normal saline solution should be injected subcutaneously and repeated when absorbed. To reduce temperature, the infant is wrapped in a cheese cloth damped with water at 100° F. The temperature is then reduced by fanning the baby which causes evaporation of the water. CHRISTOPHER ROLLESTON.

Ophthalmology.

Congenital entropion ('*Lancet*,' 1914, II, *p.* 1147).—**N. Bishop Harman.**—The lashes in the lower lid were permanently erect, and the child was born with the condition. The meibomian glands seemed deficient. The mother was normal, but the grandmother was said to have had a double row of lashes. It was proposed to split the lid, so as to separate the lashes from the glands, and graft between the two a strip of mucous membrane. If that succeeded the author expected the lashes would be prevented from reaching the cornea again. J. ALLAN.

Prenatal corneal opacities ('*Med. Journ. of Austral.*,' 1915, II, *p.* 8).—**J. M. Baxter.**—A baby, aged three months, showed dense opacities of both eyes hiding the iris and pupil. The mother had noted the condition from birth. The case was treated with radium, and the opacities cleared up.
F. R. B. ATKINSON.

The bacillus of bovine tubercle as a factor in phlyctenular affections of the eye ('*Lancet*,' 1914, II, *p.* 153).—**Sydney Stephenson** points out that the association between phlyctenulosis and tubercle is proved on both clinical and biological grounds, and can no longer be doubted even by the most sceptical. There is also considerable evidence to support the view that the bovine tubercle bacillus plays an important *rôle* in this affection, and if this contention can be upheld then the remedy lies at hand in the shape of a pure milk supply. It is, indeed, possible that could such be secured by legislation, phlyctenulosis might become one of the rarer affections of the eye in poor children, instead of being, as it is at present, accountable for the vast majority of inflamed eyes in that class. The greatest cause of defective vision in childhood might be largely remedied. At all events, pending legislation, it would certainly seem advisable to sterilise raw milk before giving it to infants and children. J. ALLAN.

Causes and treatment of chronic conjunctival affections in childhood ('*Arch. of Ped.*,' 1914, XXXI, *p.* 895, and '*New York State Journ. Med.*,' 1914, XIV, *p.* 579).—**Anna W. Williams** gives an account of a careful investigation of chronic conjunctival affections in children, and summarises her studies as follows: (1) The written descriptions of trachoma do not agree as to a clinical or a pathologic entity. (2) Among the children of sixty public schools in the crowded lower east side of New York City (supposed to be a hotbed of trachoma) there were found no cases of conjunctival affections answering in their entirety to the classic descriptions of trachoma. (3) None of the cases of follicular affections in these children have developed cicatricial changes due to infection; on the contrary, the great majority of them now present normal conjunctivas. These results may be chiefly attributed to the following measures: (*a*) The carrying out of preventive methods of treatment, such as ophthalmia schools and school clinics, summer camps, mothers' demonstration classes, home instructions, and "follow-up" work; (*b*) more minute care of acute, as well as of chronic cases, including the specific treatment given at clinics and the follow-up work in their homes; (*c*) non-operative procedures in a large number of cases formerly operated upon. (4) Trachoma inclusions are nests of growing bacteria in epithelial cells—hæmoglobinophilic bacilli in certain cases of papillary conjunctivitis, gonococci in certain cases of gonorrhœal conjunctivitis, and possibly other bacteria in certain other cases of conjunctivitis. (5) If trachoma is present or should be introduced among school-children, it may be controlled by methods which are within practical limits. J. ALLAN.

Pediculosis of the scalp and eye disease ('*Lancet*,' 1914, II. *p.* 966). —**A. C. Hudson** maintains that in severe cases of phlyctenular keratitis the factor primarily responsible is a pediculosis of the scalp, the ocular affection owing its origin to a transference, in all probability by the fingers, of infective material from the scalp to the eyes. There is, therefore, an urgent indication for the frequent periodical examination of the heads of all school children, followed when necessary by appropriate treatment and facilitated by a regulation that, in the case of boys, at any rate, the hair must be kept cropped close to the scalp. The author is convinced that such a procedure would obviate much suffering and severe injury to sight, and would thus be justified not only on humanitarian but also on economical grounds. J. ALLAN.

Fragilitas ossium ('*Journ. Amer. Med. Assoc.*,' 1914, LXIII, *p.* 1996).— **M. Ostheimer** reports a case of fragilitas ossium in a girl, aged 3 years. The patient had experienced nine fractures of the long bones at different times. The condition was associated with a deep blue colour in both sclerotics. There was no other history of fractures in the family.

T. R. WHIPHAM.

Dilated pupil of Argyll-Robertson type ('*Lancet*,' 1914, II, *p.* 1147). —**A. Hugh Thompson.**—The condition occurred in a young girl and there was well marked contraction on closure of lids. It was not congenital in her, because two years before her pupils were normal and she had only slight myopia. The knee-jerks were normal. J. ALLAN.

Cysts in the anterior chamber arising from the pars ciliaris retinæ ('*Lancet*,' 1914, II, *p.* 1148).—**W. T. H. Spicer.** The case had been under observation for seven years; it began with a white spot at the edge of the pupil at 3 months of age. At sixteen months, when first seen, there were three opaque finger-shaped masses coming into the anterior chamber from behind the iris. Four years later these had disappeared, and a cyst about 4 mm. in diameter was seen floating freely in the anterior chamber. Other cysts appeared later and finally there were seven, floating like toy balloons in the anterior chamber. In the meantime the eye had become glaucomatous, a ciliary staphyloma had formed and the eye was removed. The pathological examination showed that the cysts were formed of embryonic retinal tissue containing vitreous. They had their origin in the pars ciliaris retinæ, starting from cellular membranes, which grew over the iris and also into the vitreous; the cysts grew on the surface of these membranes. There was in many places in the walls of the cysts a resemblance to glioma tissue. The case further proved the non-mesoblastic origin of the vitreous. J. ALLAN.

Cerebral degeneration associated with macular changes (*'Med. Press,'* 1915, I, *p.* 141).—**F. E. Batten** and **S. Mayou,** at a meeting of the Royal Society of Medicine, Section of Ophthalmology, contributed a paper on cerebral degeneration associated with macular changes, and gave a pathological description of a case. In these cases a curious pigmentation occurred at the macula, and usually also around it, and considerable optic atrophy was also present. The brains of these cases did not present any macroscopical abnormality, and they had the usual convolutional pattern, as well as the normal weight and relationship to the cerebellum. The brain and nervous system were examined by several staining methods. There was found to be some degeneration in the medullated fibres; in the cerebellum the myeline was breaking down and degeneration was present in the cells of Perkinji. The most profound change was in the Betz cells; instead of the Nissl granules, there was a curious accumulation of fine granules around the nucleus. In the cerebellum were large granular cells not normally seen. The most marked change was found in a child who had the disease longest, namely, three and a half years. There were marked changes in the fundus, a shrinking of the convolutions, and in some cases the Betz cells were too degenerated to show the vacuolation. This group was similar to the Warren Tay-Sachs cases of amaurotic family idiocy, but occurred at a later age and was not race-selective. The disease now described was characterised by progressive blindness, progressive paralysis, and progressive dementia, but changes in the macula were not always present. S. Mayou dealt with the pathology of the eye condition. The child he examined had evidently lost all perception of light, but that was not so in all cases. Immediately after death the eyes were injected and stained. The changes were confined to the retina, but varied enormously in different parts of the fundus. The principal change was round the macula region. The internal nuclear layers had disappeared altogether, also the rods and cones, and there was some migration of pigment from the retinal cells. J. ALLAN.

Congenital phthisis bulbi (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, *p.* 1949).—**A. Brav** reports a case of phthisis bulbi, the result of uveal suppuration *in utero.* The child was well developed and had several erosions on the face, one of which had a suppurative appearance. The eyelids were normal but closed. Both orbits showed marked signs of suppuration and contained some purulent discharge. Deep down in the right orbital cavity there was the remnant of an eyeball the size of a large pea. Scleral tissue was easily recognised, in the centre of which were the remains of a cornea, but there was no trace of iris; the conjunctiva was red and congested. The stump of the left eye was much smaller than the right and the discharge from it was more marked. An examination of the ocular discharge showed the presence of diplococci which did not react to the gonococcic stain. The mother had a pustular acne eruption about one month before delivery, which was probably the external manifestation of some deep-seated infection. The author states that the condition must be differentiated from other congenital abnormalities, such as microphthalmos and anophthalmos. T. R. WHIPHAM.

Orbital abscess with optical neuritis due to acute ethmoiditis (*'Laryngoscope,'* 1914, XXIV, *p.* 803).—**J. H. Güntzer.**—A girl, aged 7 years, suddenly developed an orbital abscess with optic neuritis without any history of a recent illness. The orbital abscess was first incised on the nasal side below the brow, and on the following day the ethmoidal labyrinth was opened by the external route. Complete recovery took place.

J. D. ROLLESTON.

A clinical form of tuberculous meningitis beginning with paralysis of the oculo-motor nerve (*'Journ. de Méd. de Paris,'* 1914, XXXIV, *p.* 575). —**Marie** and **Weill** relate the case of a boy, aged 4 years, a congenital syphilitic, who, during convalescence from measles, developed ptosis, external strabismus, and dilatation of the right pupil. There was no headache, vomiting, constipation, or rigidity. Pulse and respiration regular. Kernig's sign negative. Lumbar puncture gave a clear fluid under normal pressure, definitely albuminous with a moderate lymphocytosis. The next day vomiting and Cheyne-Stokes's breathing occurred, and the pulse became slow. The child died next morning. The necropsy showed tubercles along the vessels and nerves of the base with enlarged and caseous tracheo-bronchial glands. J. PORTER PARKINSON.

The cure of squint (*'Med. Press,'* 1914, II, *p.* 617).—**N. Bishop Harman** points out that treatment could be put into three grades: (1) Balancing the vision of the eyes; first there must be correction of any error of refraction by retinoscopy; next, exercise of the vision of the squinting eye. (2) The awakening of the fusion faculty. (3) Operation. The *rationale* of this step lay in the fact that squint of any duration was associated with changes in the tendons, and that these acted as insuperable obstacles to the resumption of brain control. The author describes his operation of "subconjunctival reefing and advancement." One of the advantages of this combined operation is the power for nice regulation of effects. This is of the utmost importance when operation has to be done early to save binocular vision, for at an early age a general anæsthetic is commonly needed, and the operator is entirely dependent on his own judgment and *technique*. J. ALLAN.

Reviews.

THE YEAR-BOOK OF OPEN-AIR SCHOOLS AND CHILDREN'S SANATORIA. Edited by T. N. KELYNACK. Vol. I, 1915, pp. 444 + liii, with many illustrations. London: John Bale, Sons, & Danielsson, 1915. Price 7s. 6d. net.

A VAST amount of attention has been given during the last few years to the treatment and prevention of all forms of tuberculosis in children, and Dr. Kelynack has performed most valuable service in bringing together, into a single volume, details of all that is being done in this direction. His 'Year-Book' sets out to provide a complete and trustworthy account of the main principles and practices now governing the education and treatment of children in the open air. It contains full descriptions of the various open-air schools, children's sanatoriums, and other agencies that provide for open-air care and instruction. Practical information as to ways and means, methods and procedure, is added to show how the advice given may best be carried out. The 'Year-Book' is rendered even more complete by the inclusion of numerous original articles and critical surveys by authors of special experience in the matters with which they deal. They include such subjects as the construction and management of a sanatorium school for children, the architectural ideals in the design of such institutions, the design and utilisation of open-air schools in town and country, the best methods of open-air instruction, the special part to be played in it by school-teachers as nurses, and so forth. Among the "critical surveys" are interesting papers on the sun-cure in tuberculosis, tuberculosis of the glands, the bovine tuberculosis that is so common among Edinburgh school-children, the merits of school-gardening, and the importance of attention to the teeth of children attending such schools. In many of the counties and large towns special schemes for open-air education and treatment have been adopted, and brief accounts of these schemes are inserted. This section of the 'Year-Book' is followed by accounts of the chief special hospitals, homes, and colonies for tuberculous and delicate children. Room has been found to include much interesting information about the warfare against tuberculosis in children that is being waged in America and other countries. At the end of the volume is a *catalogue raisonné* of the associations and societies and other bodies dealing with open-air education and treatment, that should be of great practical utility to workers in this field of social activity.

The illustrations are well chosen, and add considerably to the practical value of the 'Year Book,' its text is clearly written, and should be readily intelligible to the lay reader. The volume should be of great value as a book of reference for public authorities, the secretaries of societies and institutions, social service workers, home visitors, and all who are directly or indirectly engaged in the campaign against tuberculosis. To all these Dr. Kelynack's 'Year-Book' may be warmly recommended. It certainly supplies a long-felt want. A. J. J.-B.

MENTALLY DEFECTIVE CHILDREN. By ALFRED BINET and TH. SIMON, M.D. Authorised translation by W. B. DRUMMOND, M.B., C.M., F.R.C.P.E. 1914. London: Edward Arnold. Pp. 180. Price 2*s*. 6*d*. net.

THIS book will be found to be of considerable use to all who have to deal with mentally defective children, whether they be teachers or medical men. The authors discuss the psychology of such children and the utility of special schools, and describe at some length the pedagogical examination of children and the medical examination of defectives.

Miss M. Drummond contributes an appendix containing the Binet-Simon tests of intelligence, and Prof. Alexander Darroch has written an introduction.

The problem of the mentally defective child has been studied more methodically in France than in this country, and we welcome an English translation of this book, which is the outcome of much patient investigation on the part of the authors. T. R. W.

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Original Articles.

OVARIAN SARCOMATA IN CHILDREN: AN ACCOUNT OF THREE CASES.

By T. Twistington Higgins, F.R.C.S.Eng.,
Resident Medical Superintendent, the Hospital for Sick Children, Great Ormond Street, W.C.

Sarcomatous tumours of the ovary are of such rare occurrence, even in children, that it seems desirable to place all cases on record. This must be the excuse for the present communication.

A girl, aged 5 years, was admitted to the Hospital for Sick Children, Great Ormond Street, on September the 23rd, 1914, in a condition of urgent illness.

Six weeks previously a swelling had been noticed in the lower abdomen, which had steadily increased in size. She suffered from colicky pain and some constipation. During the week preceding admission her symptoms became more pronounced; she vomited and was feverish. Blood was passed in small quantities *per vaginam.*

Her previous health had been excellent.

On admission her temperature was 102° F. and pulse 130 per minute. The tongue was dry and furred.

A large swelling occupied the whole lower abdomen, extending upwards beyond the umbilicus. This swelling was very tender and the overlying abdominal wall rigid. It was dull on percussion, and catheterisation made no appreciable alteration in the physical signs.

Per rectum a firm smooth mass could be felt occupying the middle line.

Mr. L. E. Barrington-Ward saw the case with me, and at his request I proceeded to perform a laparotomy.

Anæsthesia having been induced with ether, the abdomen was opened through a right pararectal incision. The nature of the enlargement was at once apparent as a solid tumour arising in the pelvis. The incision was enlarged and the tumour shelled out of the abdominal cavity.

It was slightly adherent at its upper part to coils of small bowel and omentum, which, however, separated easily. It was then found to be springing from the left ovary, which was removed with the tumour, the pedicle being ligatured off with stout silk. No evidence of secondary deposits could be found in the abdominal cavity, and the remaining tube and ovary appeared healthy.

The uterus was perhaps a little large for a child of this age, but otherwise appeared normal.

The abdomen was closed in layers and recovery was uneventful, the skin sutures being removed on the eighth day, and the child discharged from the hospital on October the 6th.

With the idea of diminishing the chances of recurrence of the growth, she was subjected to a course of X-ray treatment by Dr. Ironside Bruce. This consisted of thirteen twenty minute exposures at intervals of one week through eight layers of felt at a distance of 10 in. from the tube.

When last seen (January, 1915) she was fat and well.

Pathology.—The tumour after removal (Fig. 1) weighed 3½ lb. and had attached to it a portion of the left Fallopian tube. No trace of the normal ovary was present. The surface was smooth and glistening, with here and there small cysts containing a blood-stained serous fluid; apart from these cystic areas the consistency was firm. On section the main mass of the growth was found to consist of marble white sarcomatous tissue. Cystic degeneration was in evidence at various points in the substance of the tumour, some cysts containing blood-stained serum and others colloid material. (Fig. 2).

Microscopically.—The solid portions of the tumour showed the structure of a mixed spindle and round-celled sarcoma, the round cell predominating.

Diagnosis.—Mixed-celled sarcoma, mainly round-celled.

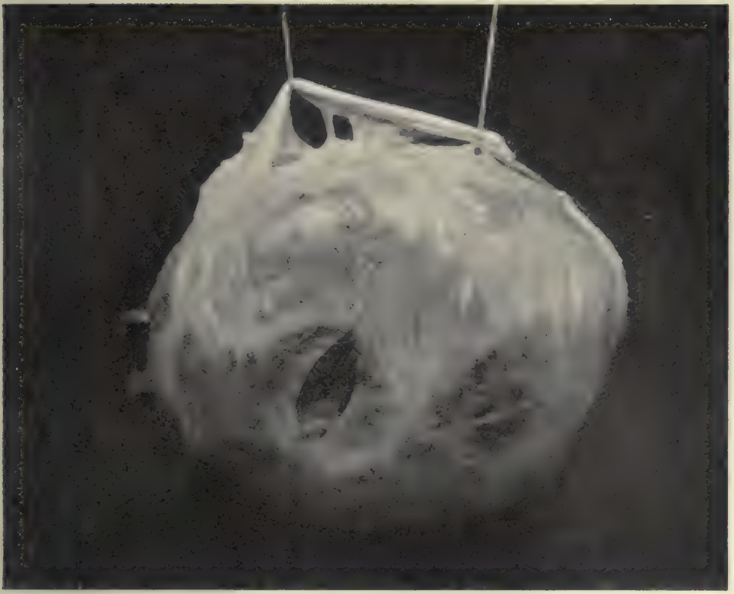

FIG. 1.—Tumour after removal.

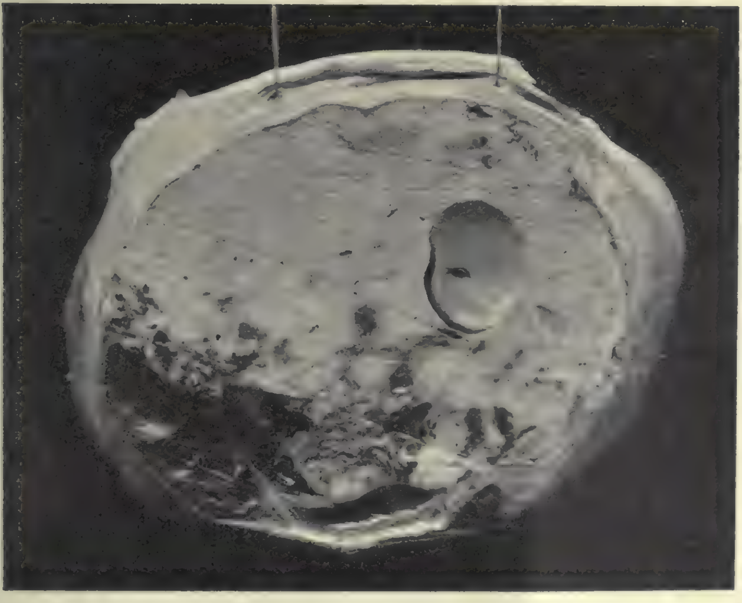

FIG. 2.—Cut surface of tumour.

The Museum of the Hospital for Sick Children contains two further specimens of ovarian sarcoma, one removed successfully during life, the other obtained from a fatal case. I had the opportunity of studying the former personally, while it was under the care of Mr. E. M. Corner.

A brief account of these two cases may be of interest:

(1) A solid tumour about the size of a cricket ball, with a portion of the corresponding Fallopian tube attached, was removed from the right broad ligament of a girl aged 10 years. She was admitted to the hospital on October the 22nd, 1912, with a history of recent colicky abdominal pains, some constipation, and loss of weight. Urination was natural, and there had been no bleeding from the vagina. A lump in the belly had been noticed five weeks before admission.

On examination the patient was pale with a normal temperature and pulse rate. A swelling was noticeable in the right lower abdomen, produced by a firm rounded freely movable tumour apparently arising in the pelvis.

Per rectum a hard smooth mass was palpable on the right side, clearly part of the same tumour.

Laparotomy was performed on October the 27th, 1912, and the tumour removed with ease. It was slightly adherent at one or two points to the omentum, and some blood-stained fluid was present in the peritoneal cavity. The child made a complete recovery, and a letter, dated January the 7th, 1915, states that she remains in perfect health.

The microscopic structure of this tumour was that of a mixed-cell sarcoma—round the spindle cells—with a preponderance of the small round cell.

(2) The specimen consisted of a large rounded solid tumour, the size of a cocoanut, which occurred in the child, aged 7 years, who was under the care of Dr. West in 1871.

She was admitted in an exhausted condition with a large abdominal mass, rising out of the right side of the pelvis and extending upwards to the liver. The illness was of four months' duration. She maintained a febrile condition, her temperature ranging between 103° F. and 104° F. Œdema of the lower extremities finally supervened, and she gradually sank and died a month after admission.

The tumour weighed 5¾ lb., and arose in the right ovary. It was encapsulated except at its upper pole, where it had burst through its capsule and was extending by direct invasion to adjacent omentum, intestines, and liver, so that fragments of growth remained attached to these organs when the tumour was removed. There was no glandular enlargement and no metastases were found elsewhere.

The growth showed areas of cystic and colloid degeneration in places, and microscopically was evidently almost pure round-celled sarcoma.

The ætiology of ovarian sarcomata is unknown. As they are more common in children than in adults (Bland Sutton) (1), presumably they are analogous to the renal sarcomata, though they are certainly much less frequent in their appearance.

A. Doran (3) has recorded a case in a fœtus of seven months.

Bland Sutton (2), in 1896, collected 100 cases of ovariotomy in girls under fifteen. Twenty-one of the series were instances of sarcoma, though, as he points out, this does not represent the real proportion, since many sarcomata end fatally without operation.

A striking feature of his figures was the heavy mortality—seven cases died immediately after the operation, whilst four of those he was able to trace were dead at the end of one year. The disease is obviously, therefore, a very fatal one, and our experience is unusually happy.

The three cases here recorded illustrate well certain aspects of the disease, namely, the insidious onset, with unexplained colicky pain, later the appearance of a mobile lump, with possibly some precocious menstruation, the steady enlargement of the abdomen, with pain and fever, the result of an adhesive peritonitis, occurring on the surface of the growth, and finally the tendency to spread, by direct extension, along lines of adhesion rather than by metastases. Few conclusions, however, can be drawn from so short a series of cases, and this account is proffered rather as a numerical addition to the literature than otherwise.

I am indebted to the members of the staff of the Hospital for Sick Children concerned for their permission to publish this account.

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(2) *Idem.*—'Diseases of the Ovaries and Fallopian Tubes,' 1896, p. 175.

(3) DORAN, A.—"Large Ovarian Tumours in a Seven Months Child," 'Trans. Path. Soc.,' 1889, xl., p. 200.

A CASE OF THE ATONIC FORM OF CEREBRAL DIPLEGIA.*

By E. G. Fearnsides, M.A., M.D.Cantab., B.Sc.Lond., F.R.C.P.,
Beit Memorial Research Fellow; Assistant Physician to the Hospital for Epilepsy and Paralysis, Maida Vale, London, W.; late Medical Registrar to the London Hospital, E.

H. B—, born April the 7th, 1910. Family history: The patient's father, born in 1881, is the third child of a family of three children, aged respectively 38, 35, and 33 years. The patient's mother is the eldest of four children, aged 33, 29, 27, and 23 years. As far as can be ascertained there is no family history of nervous or muscular disease. The parents married in 1900, and since marriage have enjoyed good health. Of this marriage the first child was a male, who suffered after birth from "convulsions" and died at the age of 4 months; the second, a girl, now aged 12½ years, who is normal; the third, a normal boy, aged 8 years; and the fourth, the patient, aged 3¾ years. Whilst carrying the patient, the mother's health was good.

The child was born at term, and at birth weighed 7 lb. 8 oz. At the age of three weeks he was found to have a right inguinal hernia; he was taken to Shadwell Hospital, circumcised, and given a truss. For the first five months of life he was fed by the breast only; later he was fed on milk and barley water and then on milk and Allenburys' No. 1 Food. When aged six weeks he was noticed to be "soft"; he was taken to doctors, who treated him for "wasting," and ordered dietetic treatment, with extra fat, oil and malt, and virol, and cold sponging. Despite treatment, he gained weight slowly. In June, 1912, he began to suffer from a nasal discharge; this continued off and on until November, and in September, 1912, was complicated by the appearance of otorrhœa. In October, 1912, he was treated at the Aural Department of the London Hospital for "rhinorrhœa and otorrhœa"; under treatment these discharges ceased. In November, 1912, a radical cure for right inguinal hernia was performed by Mr. Lett; the wound healed by first intention. He was able to say "mam" and "dad" at the age of eight months, cut his teeth at the age of thirteen months, but did not walk till he was aged two.

He first came under my observation in December, 1912, when he was an in-patient at the London Hospital under the care of Dr.

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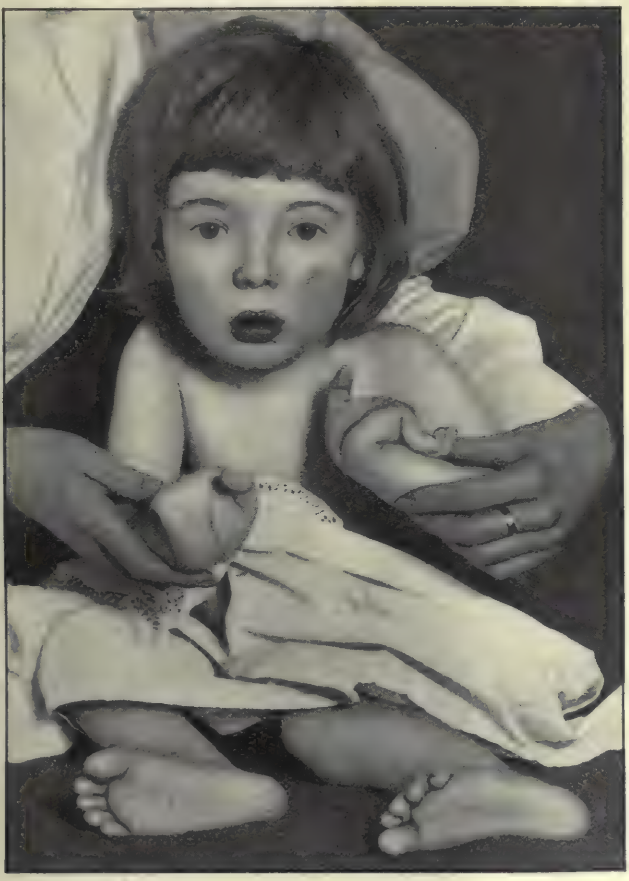
* The case was shown at the Neurological Section of the Royal Society of Medicine, on February the 25th, 1915.

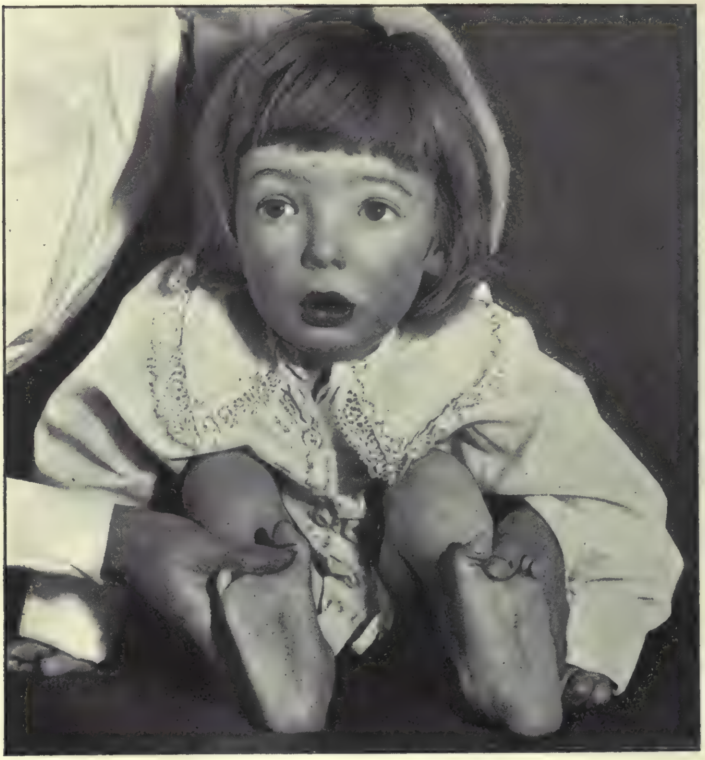
Head. At that time he seemed to be a characteristic example of the disease, amyotonia congenita. He could not talk. He dribbled continuously. He could not sit up. His habits were dirty, but yet he could make his requirements known and was intelligent. He made attempts to feed himself. He was a small, thin, pale, limp child. His hair was long and lax. The ears, palate, and face were well developed. The head was large and the forehead high. The fontanelle was almost closed. The teeth were normal. No abnormal signs were discovered in the heart, lungs, abdomen, or urine. The special senses and optic discs were normal and the cranial nerves unaffected. The muscles of the face and those moving the jaw were in power feeble. The face was flat and expressionless.

Fig. 1.



The musculature throughout the body and limbs was small and absolutely atonic. The ligaments were relaxed, and the limbs could be placed into all sorts of fantastic positions without causing any inconvenience. The movements of the spine were extremely free. There was no ball to either great toe. On palpation it was impossible to distinguish the limits between subcutaneous tissue and muscles.

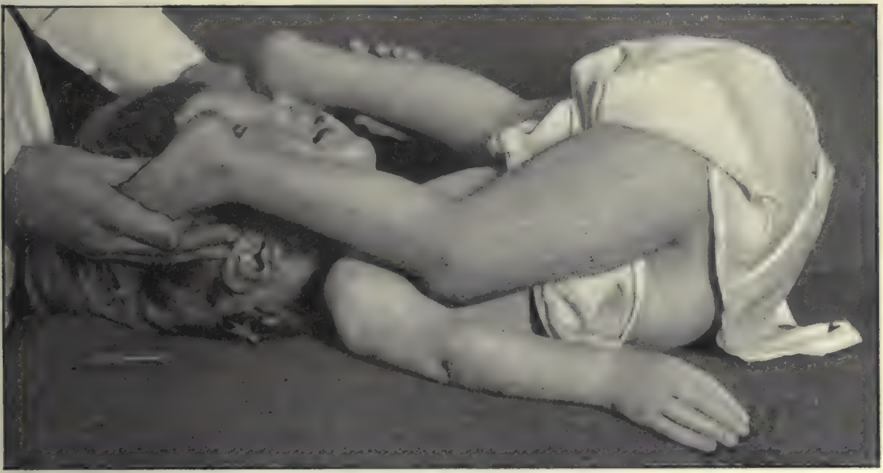
Fig. 2.



The muscular regions had a peculiar soft, velvety feel. A limb held by its proximal end could be shaken like a flail. Contractures were not present, and there was no deformity of the body or limbs. All voluntary movements could be performed quickly and with normal range. The bones appeared to be unaffected. No sensory changes could be demonstrated. To electrical stimulation no changes were present. No deep reflexes could be obtained. The plantar responses were difficult to elicit; usually on stimulation of the sole a gross voluntary movement occurred. The three photographs taken at this time and here reproduced well illustrate the amyotonic condition.

On January the 7th, 1913, the patient caught measles and was discharged. He was next seen at the London Hospital in August, 1914. At that time he complained of pain in the abdomen. The legs were much less hypotonic than formerly, and knee-jerks could be elicited. In September, 1914, he was put into a double Thomas' splint, which he wore continuously until admission. On February the 12th, 1915, he was admitted to the London Hospital under the care of Dr. F. J. Smith, suffering from constipation and a distended abdomen; under administration of enemata the dilatation entirely disappeared.

FIG. 3.



The patient is a bright, happy, contented child. He weighs 1 st. 13¾ lbs. The head measures 20¼ in. in circumference, 13⅛ in. from nasion to inion, and 13¾ in. from external auditory meatus to external auditory meatus. He is clean in his habits, but cannot feed himself. He knows the value of money and plays with toys. He no longer dribbles, but is babyish in his habits. Mentally he is certainly backward. Speech has a curious hesitating and nasal character, and he uses few words to express his wants. He never complains. The special senses and optic discs are unaffected. The pupils react normally, and movements of the eyes, jaws, face, palate, larynx, and tongue can be carried out voluntarily through a normal range and with fair power. The face is flat and shows little expression. The hands and feet are proportionately long and narrow. The muscles of the upper extremities and trunk are intensely hypotonic. The wrists can be hyperextended and hyperflexed to such an extent that the hands can be brought into contact with the forearms. He can sit up, but when sitting cannot hold his back straight. He makes feeble attempts at walking, crossing the knees and extending the ankles. The muscles of the feet are hypotonic, those of the calves, thighs, and to a less extent of the buttocks hypertonic. There is some contracture of the adductor muscles, and abduction of the thighs cannot be passively brought about over a normal range. The knees and hips can be fully flexed by the exertion of continued pressure, and the ankles can be dorsiflexed beyond the average limits. When the child is held by the axillæ the kyphosis of the spine is corrected, the legs are extended at the knees and flexed at the hips. If one then tries to bend the legs, they are found to be rigid. When lying in bed or sitting up he can move his arms and legs freely, but all his movements show gross inco-ordination, and in every movement of his extremities head, neck, trunk, and all four extremities partake. Dyssynergy occurs in every voluntary effort. The child can be "folded" up on itself. All his ligaments are relaxed. There is no muscular wasting. No fibrillary twitchings have ever been observed. The relaxation of muscles after contraction takes place normally. The muscles of the extremities all respond normally on electrical stimulation. The knee-jerks are extremely brisk, and ankle-jerks can be obtained. The plantar responses are indefinite in type, but a true extensor response has never been observed. Abdominal reflexes are present. The wrist- and elbow-jerks cannot be elicited. The sphincters are controlled. The Wassermann reaction is negative. No abnormal signs in the organs are present.

When this child first came under observation in December, 1912, he appeared to be a characteristic instance of amyotonia congenita. All the muscles were hypotonic, and no tendon-reflexes could be elicited. Since this time he has improved considerably, and before he was placed in the splint in September, 1914, he was able to walk with difficulty. Now, in February, 1915, he shows exaggerated knee-jerks, and ankle-jerks can be obtained. In active movements of the extremities power is little impaired, but there is gross clumsiness and ataxy.

The diagnosis in this case lies between amyotonia congenita (Oppenheim's disease) and the atonic form of cerebral diplegia. Batten and von Wyss (1) in the March number of this JOURNAL have described four instances of the latter condition and have called attention to the fact that hypertonicity in the patients showing the cerebral form of atonicity can frequently be induced in the lower extremities by holding the child suspended by the axillæ—a phenomenon which is here well illustrated.

The patient, though backward, cannot at present be described as mentally defective and would seem to belong to Pierce Clark's group of cases of cerebro-cerebellar diplegia. Against the diagnosis of amyotonia congenita we have the present day findings of exaggerated tendon-reflexes in the lower extremities and persistent adductor spasm. The child, however, has spent six months in a double Thomas's hip splint, and we know little of the effect of continued rest upon the tone of the muscles of patients with amyotonia congenita. I am indebted to Dr. F. J. Smith for permission to publish this case, and to him I offer my best thanks.

REFERENCE.

(1) BATTEN and VON WYSS.—"The Atonic form of Cerebral Diplegia," BRITISH JOURNAL OF CHILDREN'S DISEASES, 1915, xii, p. 65. This paper contains the full literature on this interesting subject and discusses the differential diagnosis between amyotonia congenita and the atonic form of cerebral diplegia.

CASE OF TUBERCULOSIS OF THE AUDITORY APPARATUS; INTERNAL HYDROCEPHALUS; PERMANENT DRAINAGE OF THE LATERAL VENTRICLE.*

By C. E. WEST, F.R.C.S.
Aural Surgeon, St. Bartholomew's Hospital.

A GIRL, aged 2½ years, was admitted to St. Bartholomew's Hospital on May the 23rd, 1914, with a history of pain and discharge occurring from the left ear on May the 12th and left facial paralysis on May the 19th. There was complete left facial paralysis. On the right side a radical mastoid operation had been carried out at Guy's Hospital in February, 1914. There was a continued discharge from this ear, and the lymphatic glands in both anterior triangles of the neck were enlarged. A few days after admission an extensive radical mastoid operation was performed on the left side. The tympanic part of the facial nerve was found to be completely lost in a mass of soft granulations, and the whole of the region of the labyrinth was crumbling, and the jugular bulb was exposed.

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* This case was reported to the Otological Section of the Royal Society of Medicine on February the 19th, 1915.

The child was very collapsed at the end of the operation.

Early in July, a facio-hypoglossal anastomosis was carried out on the left side. This had no effect on the paralysis. About July the 25th, there was a sudden complete right hemiplegia, with general signs of a chronic meningitis, squint, retraction of the head, and unconsciousness.

These features gradually passed away, but the hemiplegia continued with only slow improvement.

The right facial paralysis continued complete.

On September the 30th the left mastoid cavity was curetted out and a small sequestrum was found and removed. The right cavity was also curetted.

On October the 19th the voice became feeble and husky, and on October the 20th the child had a prolonged attack of crying followed by convulsions, mostly right-sided, and unconsciousness.

The convulsions subsided only after administration of chloroform, and recurred in a milder form later. Next day the child was much better.

A large temporal flap was turned down and the whole of the squama was removed on the left side. When the dura mater was turned down the lepto-meninges were found to be intensely œdematous, and a large quantity of cerebro-spinal fluid ran away. The brain bulged strongly through the opening. In the posterior part of the exposed area the cortex appeared of normal colour, but anteriorly, over what would represent the lower part of the motor area, the colour was blue, and there was clearly some kind of cyst. This was punctured, and was found to be an enormously dilated lateral ventricle. The fluid was allowed to run away slowly, the dura mater replaced, but not sutured, and the scalp wound closed. On the next day the child was sitting up, taking food, and quite lively. The wound healed absolutely well, in spite of much tension and bulging. The bulging continued and gradually became more tense.

On November the 3rd there was a recurrence of the fits. On November the 11th the child was once more anæsthetised and the scalp bulge was pierced by a long needle armed with No. 3 twist silk, the needle being passed right across the bulge and brought out through the skin some 2 in. beyond the edge of the old incision. Both ends of the silk were buried. One such line passed from above and behind downwards and forwards emerging in the parotid region, two others led upwards into the parietal region.

There was an immediate and remarkable passage of fluid along the threads, producing an obvious œdema. The child again had no disturbance, but the amount of fluid passed continued so large that on November the 18th the left eye was still almost closed by swelling. This has gradually subsided. Since that date the child's general health has been excellent and she has regained some power in the right limbs.

Bacteriology.—The material from the original operation was kindly worked out by Dr. Eastwood. Typically tuberculous lesions were produced in guinea-pigs, and inoculation experiments on rabbits showed that the type of tubercle bacillus was "human." Two other cases of tuberculosis of the petrous similarly worked out have proved to be of the bovine type.

THE SEX DISTRIBUTION OF RICKETS.

By John Priestley, M.R.C.S.,
Senior School Medical Inspector, Staffordshire Education Committee.

In school medical inspection children are divided into "routine" and "specially presented." The former are the children who, whether healthy or ailing, come up automatically for inspection because they have reached a certain age, viz., 5–6, 8–9, or the leaving age; the "specially presented" are children brought forward by head teachers because of some supposed defect of health.

The inspection of the "routines," therefore, gives us the opportunity never before available for a precise estimation of the natural incidence of defects in different groups of children.

Such comparisons must be made circumspectly. The personal equation of the inspector must never be lost sight of. Inspectors are not equally observant; one who is keenly interested in a particular defect will find it in more cases than another less keenly interested, and so on. But this criticism does not apply to any comparison between boys and girls, for every inspector is all the time examining boys and girls in about equal numbers on the same days, under the same skies, and in the same mental attitude.

In regard to rickets we have usually limited our record to the number of marked deformities, knock-knees, bow-legs, marked *caput quadratum*, etc., the cases that strike the eye; it is improbable that many cases are missed. The total numbers year after year, taking all the routine age periods together, have been singularly constant, viz., 1909, 1·4 per cent.; 1910, 1·6 per cent.; 1911 1·6 per cent.; 1912, 1·7 per cent.; 1913, 1·6 per cent.

Every year when boys and girls are compared there has been a difference in the proportionate number of cases in the two sexes.

Marked Cases of Rickets. Boys and Girls of 5–6, 8–9, 12–13, 13–14.

Year.	Total No. examined (boys and girls about equal).	Rickets. Boys. Per cent.	Rickets. Girls. Per cent.
1909	15,131	1·98	·83
1910	16,464	2·04	1·13
1911	19,948	2·0	1·09
1912	14,510	2·05	1·35
1913	9,215	2·16	1·12
Total	75,268	2·04	1·13

In 1912 a few routine children of ages other than 5–6, 8–9 and leavers are included. In the grand total there is some overlapping, a child of 5–6 in 1909 appearing again in 1912 as an 8–9, and so on.

Thus there is a difference in the incidence of rickets, or more correctly of post-rickety deformities, between boys and girls which is not quite in the ratio of 2 : 1, but not far from it.

The difference is just as strikingly shown when the minor cases of rickets are included. During 1909–10–11 Dr. Elizabeth J. Moffett, then on our school medical staff, carefully recorded all cases in which a trace or a suspicion of rickets could be detected. She was dealing with, roughly, 5000 examinees a year, boys and girls in approximately equal numbers. She found signs of rickets in different years in from 17 to 25 per cent. of children inspected.

As regards boys and girls her records were as follows:

Rickets—all degrees.

	1909. Per cent.	1910. Per cent.	1911. Per cent.
Boys	29·4	29·5	23·0
Girls	20·0	16·2	12·6

The general falling off in the numbers in the third year may possibly have been due in part to a little slackening of interest.

As the numbers examined in each year were approximately the same we may take the mean of these percentages, from which it appears that boys had 27·3 per cent. and girls 16·3, a ratio rather less than 2 : 1.

It seems probable, therefore, that rickets is more prevalent among boys than girls, and that this disease must be included with rheumatism, pulmonary consumption, all the graver nervous affections, and some other disorders, as diseases the incidence of which is influenced to a considerable degree by sex.

Philadelphia Pediatric Society.

January the 12th, 1915, W. N. Bradley, M.D., President.

Liquid Paraffin in Infants.—Dr. H. K. Hill described liquid paraffin as a tasteless, odourless, transparent mineral oil, recommended by Arbuthnot Lane and others for chronic intestinal stasis. When given in large doses he had observed excellent results in chronic constipation in infants. He had noted less satisfactory results in the initial treatment of severe gastro-enteritis, as castor oil seemed to produce a more thorough cleansing of the intestinal tract and the secondary constipating effect was desirable. In conjunction with lactic acid bacilli very remarkable results might be obtained in that group of diseases caused by the action of putrefactive and allied poisons absorbed from the intestines. Among these might be mentioned asthma, some forms of diabetes, migraine, cyclic vomiting, convulsions, chorea, enuresis, some forms of eczema, and many severe teething cases.

Pellagra in Childhood.—Dr. F. C. Knowles read a comparative study of pellagra in relation to the adult and child. He studied the age, sex, race, heredity influence, cutaneous, nervous, and gastro-intestinal manifestations of the disease. The diseases which preceded or were frequently found associated with pellagra in childhood were also discussed. The prognosis in childhood was mentioned, and a considerable number of references were given.

Dr. J. P. Crozer Griffith wished much to hear what Dr. Knowles had to say about the ætiology of pellagra from his study of the literature. He had been impressed by reading Sambon's publications to the effect that the disease was probably caused by the bite of the simulium. Since then other insects had been accused. It seemed pretty well recognised now that healthy corn had no effect in producing pellagra, but whether it was an infection transmitted through the bite of an insect or a food intoxication produced by the action of some mould was by no means known. He thought Dr. Knowles could perhaps give a summary of what he had learned by the study of the subject.

Dr. Knowles answered that the ætiology of pellagra still remained shrouded in doubt. He had attempted to compare pellagra in childhood with the disease as observed in the adult. He had recently seen two cases in children.

Œdema complicating Gastro-enteritis.—Dr. John F. Sinclair read this paper, prepared by Dr. Joseph A. Speed and himself. They reported four case-histories.

Dr. Hill spoke of the possibility of using calcium chloride in place of sodium chloride in cases of œdema.

Dr. Bradley referred to the fact that infants with œdema did not always recover. He spoke of an autopsy he had recently performed in an infant with œdema, in which nothing was found to explain the condition.

Dr. Sinclair added that research work has shown that in only certain cases was it justifiable to use sodium chloride for œdema. It cannot be used in every case. He feels that toxins play a large *rôle* in the ætiology of œdema.

The Schick Toxin Reaction for Immunity in Diphtheria.—Dr. J. A. Kolmer read this paper, prepared by Dr. Emily L. Moshage and himself. They had studied a large number of individuals, upon whom the test had been performed, gave several tables to show their results, and concluded that this practical experience with a small diphtheria epidemic had increased their confidence in the toxin test as a means of detecting persons susceptible to diphtheria.

Dr. Griffith had been impressed by the two charts showing the increased percentage of Schick reactions in those who were suffering from scarlet fever and from diphtheria itself. If Dr. Kolmer was right, that the scarlet fever chart was an indication that patients with scarlet fever were more liable to contract diphtheria, it must be true, even to a greater degree, of that for diphtheria. This chart showed that even after fifty days over 50 per cent. of cases will give a Schick reaction. It was reasonable to suppose that this reaction must persist, perhaps for a long time; and he would like to ask whether this was not a confirmation of the belief that individuals who had once suffered from diphtheria had an increased liability to develop it again. Dr. Griffith was hoping for great things from this reaction, combined with the von Behring toxin-antitoxin treatment, in hospital practice. Both the University and Children's Hospitals gave a prophylactic dose of antitoxin to every child upon admission; yet there were many instances in which he hesitated to give this on account of the condition of the infant. In view of this and of the very short duration of protection which antitoxin gives, as shown by Dr. Kolmer's charts, it would be most desirable to be able to determine positively whether or not the child needed immunization, and then to treat it in some way which would give a much longer protection than the present method affords.

Dr. Hill referred to the pseudo-reaction, and asked Dr. Kolmer whether the reactions shown by the twenty nurses and physicians at the Municipal Hospital who were exposed so constantly to diphtheria but who did not contract the disease, might not have been pseudo-reactions, just as was seen in the case of the resident physician whom Dr. Park recently showed in New York, who was apparently immune.

Dr. Gittings said that these figures for susceptible adults were larger than those of Schick and hardly seemed to show the disproportion in susceptibility between children and adults which one would expect upon the the basis of clinical experience. The proportion of susceptible children during convalescence from diphtheria also seemed astonishingly high if the disease itself were to confer any active immunity. He asked Dr. Kolmer whether or not Schick tests had been made after toxin-antitoxin immunization, for comparison both with the effects of antitoxin and with the effects of clinical diphtheria.

Dr. KOLMER spoke of one man with highly virulent bacilli in his throat—killing a guinea-pig—but without any clinical symptoms, whose Schick reaction showed him well protected from diphtheria. In the presence of symptoms, as an angina showing staphylococci or streptococci and diphtheria-like bacilli or a dirty discharge from the nose showing diphtheria-like bacilli in cultures, a positive toxin reaction indicated that the patient was susceptible and true diphtheria was a possibility; a negative toxin test, however, was of more value in excluding diphtheria in the diagnosis on a basis that the patient was probably immune. The pig test alone proved the harmfulness of the bacilli found. Dr. Kolmer had not yet used toxin-antitoxin mixtures except experimentally in the lower animals. He had not found any family predisposition to diphtheria that could not be explained upon other grounds. The work would indicate that, in general, persons recovering from diphtheria were at least just as susceptible to diphtheria as they were before the attack or as persons who had never had the disease. Pseudo-reactions were quite unusual, and personally he regarded all reactions evidently not traumatic as true toxin reactions.

The President then delivered the Annual Address.

Abstracts from Current Literature.

Medicine.

The cholesterin contents in the blood of children (*'Riv. di Clin. Pediat.,'* 1914, XII, *p.* 339).—**A. Filia** found as the result of numerous experiments that cow's milk is richer in cholesterin than human milk, and in the majority of cases the blood of infants reared at the breast is richer in cholesterin than that of hand-fed infants. He is of opinion that the latter fact may account for the undeniably greater resistance commonly observed in breast-fed children. It also seems probable that the cholesterin in the blood is not of alimentary origin, and that in artificial feeding some kind of action is produced which diminishes the absorption of cholesterin from the intestinal tract of the infant. VINCENT DICKINSON.

The blood in pertussis (*'Münch. Med. Woch.,'* 1914, LXI, *p.* 303).—**W. Schneider** examined thirty cases in children at weekly intervals from the time of their admission to hospital till their discharge, *i. e.* about a week after they had been free from paroxysms. The blood showed the following changes, which set in rapidly after the appearance of the catarrhal symptoms: (1) There was a general leucocytosis which lasted for three weeks and corresponded clinically to the height of the disease. It rose to an average maximum of 27,100 and then fell to normal on recovery. The highest number of leucocytes observed in uncomplicated cases was 39,400, and in complicated cases 85,800. (2) The lymphocytes in the first four weeks were relatively increased, on the average ranging between 58 and 63 per cent. The highest number was 86 per cent. in uncomplicated, and 79 in complicated cases. (3) The large mononuclears and transitionals also showed a slight increase which, as a rule, amounted to 6·2 per cent. The highest figure was 10 per cent. The blood-picture possesses diagnostic, but little prognostic, value. J. D. Rolleston.

On forty-one cases of infantile Leishmaniosis observed at the pædiatric clinic at Palermo in the scholastic year 1912–13 (*'Gazz. intimaz di Med., Chir., etc.,'* 1915, XXIII, *p.* 4).—**G. di Giorgio.**—Four were children under one year, twenty-seven were in the second year, six in the third year, and four between three and five years. The sexes were equally affected. The largest number of cases occurred in the spring and early summer. The poorer classes were the chief sufferers, especially country people who lived under defective hygienic conditions in close proximity with domestic animals. With the exception of one acute case, all belonged to the subacute and chronic forms described by Jemma (*v.* British Journal of Children's Diseases, 1914, xi, *p.* 455). Blood examination showed that leucopenia, though frequently present, was not constant, about half the cases showed a normal number of white cells or a slight leucocytosis, the rest had leucopenia. Of the forty-one cases, four recovered, twelve died, and the rest were still under treatment or had been lost sight of. Cacodylate of iron was the principal drug employed in the treatment.

J. D. Rolleston.

The treatment of Leishmaniosis (*'La Pediatria,'* 1915, XXIII, *p.* 81). —**G. di Cristina** and **G. Caronia** have experimented in eight cases, of which details are given, with intravenous injections of 1 per cent. solution of tartar emetic in distilled water, using from 3 to 10 cgm. at intervals of two or three days. Five cases were cured and three greatly improved. In the children subjected to this method of treatment the general condition and blood condition underwent rapid improvement and sterilisation of the organism was finally effected. Examination of the splenic pulp during the treatment showed gradual diminution of the parasites and finally their complete disappearance. The mechanism of the action of the drug requires further investigation, but after the first injections a more or less apparent deformation of the cytoplasm of the parasites was observed, which gives rise to the presumption that a process of lysis takes place.

Vincent Dickinson.

Acute lymphatic leukæmia (*'Liverpool Med.-Chir. Journ.,'* 1914, XXXIV, *p.* 324).—**N. P. Marsh** reports three cases of acute lymphatic leukæmia which serve to illustrate the three principal types as described by Gilbert and Weil, viz., (1) the rare typical acute leukæmia with enlargement of the lymphatic structures as the prominent feature; (2) the hæmorrhagic form, characterised by an intense hæmorrhagic diathesis; (3) the bucco-pharyngeal, *i. e.* the anginous and pseudo-scorbutic form, with hæmorrhagic infiltration and necrotic ulcerative processes into the mouth and pharynx. Case 1: A boy, aged 11 years, commenced bleeding from the gums one month after the extraction of a tooth. The oozing continued and petechiæ appeared on the trunk and limbs. The inguinal glands alone were enlarged, and the spleen could not be felt. Vision was impaired and hæmorrhages were found in both fundi. The urine contained blood microscopically. Blood count: Reds 800,000, whites 25,000, Hb. 10 per cent. The reds showed marked poikilocytosis and occasional nucleated cells. Of the whites 94 per cent. were lymphocytes (large 28 and small 66 per cent.). Horse-serum and adrenalin (both locally and internally) and other measures failed to arrest the bleeding, and after profuse hæmorrhage from the nose and mouth the patient died from exhaustion fourteen days after the first appearance of hæmorrhage. Case 2: A girl, aged 4 years, had not been well since an attack of bronchitis three months previously. Two and a half months later a suppurating gland in the submaxillary region was incised and a carious tooth extracted, after which she had a severe hæmorrhage and bruised easily. There was a large mass of glands in the right cervical region and smaller glands in the axillæ and groins. The bronchial glands also appeared to be enlarged, but the liver and spleen were not increased in size. Temperature 103° F. A blood count was apparently not made, but a film showed lymphocytes 93 per cent. of which 75 per cent. were large and 18 per cent. small. Iron, arsenic, horse-serum, etc., failed to arrest the disease, death occurring in a few days. Case 3: A girl, aged 3 years, who had always been delicate, had had a severe epistaxis and passed blood *per rectum* two months previously. Subsequently more hæmorrhage occurred from the bowel, but not from other sources. The patient rapidly became anæmic and ran a high temperature. She was rickety and presented some petechial and subcutaneous hæmorrhages. No glands appeared to be enlarged, and the liver and spleen could not be felt. A blood film showed an enormous increase in the number of lymphocytes, with an undue preponderance of the large variety. Treatment was of no avail, and she died a few days later.

T. R. Whipham.

The ætiology of infantile splenic anæmia ('*La Pediatria*,' 1914, xxii, *p.* 752).—**G. Caronia** gives details of thirty cases which, taken in conjunction with recent observations by di Cristina and Adamo, lead him to conclude that the morbid entity named infantile splenic anæmia is due in the large majority of instances to hereditary syphilis, either alone or in association with tuberculosis; in a less number of cases to tuberculosis alone. Both ætiological factors may be explained in three ways: (1) By transmission of the disease from the parents to the offspring with consequent manifestations in organs congenitally more susceptible; (2) by production of a congenital dystrophy on the part of the hæmatopoietic organs by the action of the maternal toxinfection on the organ in process of development; (3) by influence of toxins transmitted by the milk of the mother to the child on the hæmatopoietic organs congenitally predisposed. Although most cases of infantile splenic anæmia are related to syphilis or tuberculosis, the possibility of other ætiological factors cannot be excluded, and among the principal of these may be mentioned chronic sepsis. Vincent Dickinson.

Anæmia with enlargement of the spleen; splenectomy; cure ('*Practitioner*,' 1914, xciii, *p.* 660).—**J. S. McKendrick.**—A girl, aged 8 years, had received three years' medical treatment without result, but was cured by removal of the spleen. The author was doubtful of the nature of case, but the blood count seemed to show that it was one of splenomegalic anæmia, a name suggested by Dr. Weber, in which there is a marked anisocytosis, poikilocytosis, polychromatophilia, normoblasts, a few myelocytes and white cells above 7000 per c.mm. F. R. B. Atkinson.

Splenomegaly; splenectomy ('*St. Bartholomew's Hosp. Rep.*,' 1914, l, *Pt.* 1, *p.* 7).—**H. Thursfield** and **A. E. Gow** have written a very full and interesting paper on splenectomy in cases of enlargement of the spleen. After discussing the effects of the removal of a damaged or healthy spleen, which they conclude amounts to merely a temporary alteration in the morphology of the peripheral blood, they discuss the subject of splenomegaly, and present what to many is an intricate matter in a clear and intelligible light. Much confusion exists as to the relationship of Banti's disease to splenic anæmia, the former syndrome consisting of a splenic anæmia which is followed in the later stages by cirrhosis of the liver, while the latter disease progresses to a fatal termination without cirrhosis. The authors consequently prefer to speak of both conditions as splenic anæmia, and to allow that the terminal stage of a single disease may be either a progressive anæmia or a cirrhosis of the liver. The diagnostic points of the disease are a chronic primitive splenomegaly, a diminution in the number of erythrocytes and absence of erythroblasts, a low colour-index, a leucopenia with absence of myelocytes, a diminished or normal fragility of the red cells, and an absence of enlargement of the lymphatic glands. In cases of anæmia the authors lay stress on the necessity for determining the corpuscular fragility, and point out that an increase is characteristic of the condition known as acholuric jaundice. Another point which they emphasise is the large number of red cells—5,000,000 or over—which occurs in cases of syphilitic enlargement of the spleen. Details of the cases of splenectomy which they have collected from the literature and their own experience are given in tabular form, and the writers consider that the mortality of the operation in all forms of disease should not exceed 10 to 12 per cent. In splenic anæmia they are of opinion that the operation should be undertaken as soon as the diagnosis is established, without waiting for the development of the severer grades of anæmia or for hæmatemesis. In cases of congenital acholuric jaundice splenectomy has been followed by very good results so far as is known at present, and in pernicious anæmia some noteworthy results have been obtained. In other diseases the effects of the operation cannot at present be determined with certainty, but the records given are full of interest and merit serious consideration. As regards the function of the spleen in blood diseases the authors are of opinion that the organ exerts no direct hæmolytic action, and that no one pathological change can underlie such different diseases as congenital acholuric jaundice and pernicious anæmia. They incline to the theory put forward by Klemperer and Hirschfeld that the spleen exerts a governing influence upon the erythroblastic activities of the bone-marrow by means of an internal secretion, and that in diseased conditions this influence is disordered. Thus in splenic anæmia there would be a disorder of the internal secretion giving rise to a diminution in the erythroblastic activity, in acholuric jaundice to the production of red corpuscles deficient in resisting power to hæmolysins, in pernicious anæmia to the production of normoblasts and megaloblasts, and in all diseases to an interference with the elaboration of hæmoglobin. It must be supposed that, as in the case of other internal secretions, there may be disorder arising from deficiency or from excess of secretion, or from infective processes, or again from metabolic disturbances. The paper is a valuable contribution to the subject and should be read by all who are interested in the diseases and the pathology of the spleen. T. R. WHIPHAM.

Blood-pressure in normal children (*'Am. Journ. Dis. Child.,'* 1914, VIII, *p.* 257).—**C. F. Judson** and **P. Nicholson** made about 2300 observations on children between the ages of 3 and 15 years by the conjoint use of auscultation and modified Erlanger methods. The systolic pressure showed a slight but gradual rise from 3 to 10 years. From 10 to 14 years the increase was more abrupt, with a rapid rise in the 14th year. The systolic pressure varied from 91 mm. in the 4th year to 105·5 mm. in the 14th. The diastolic pressure on the other hand remained at an almost uniform level, viz. betwen 65 and 71 mm., and the pulse-pressure increased progressively and proportionately more than the systolic pressure during the corresponding period, viz. from 26·2 mm. at 3 years to 38·1 mm. at 15. The writers lay stress on the importance of taking the diastolic pressure in every case and state that determination of the pulse pressure, indicating as it does the peripheral resistance, is the most important point to be determined in children. J. D. Rolleston.

The blood-pressure in anæmia in infancy (*'Amer. Journ. Dis. Child.,'* 1914, VIII, *p.* 270).—**J. L. Morse** and **E. T. Wyman** first made sixty-two blood-pressure observations on fifty normal babies in the first two years of life, and found that the average systolic pressure was 90 mm., the average diastolic 66 mm., and the average pulse pressure 25 mm. There was a slightly higher pressure, both systolic and diastolic, in males than in females. Both the systolic and diastolic pressures were somewhat higher in the second than in the first year, while the pulse pressure was the same. Twenty-seven observations were also made on twenty-five poorly nourished, but not anæmic, infants. The average systolic pressure was 89 mm., the average diastolic 53 mm., and the pulse pressure 36 mm. Fifteen observations were made on ten infants suffering from anæmia. The systolic pressure was somewhat higher than in the first two groups, varying in the severe cases from 100 to 124 mm., while the diastolic was considerably lower, viz., 30 to 0 in the severe cases, and the pulse pressure much higher, viz. 80 to 124 in the severe cases. There was no definite relation, however, between the amount of pulse pressure and the degree of anæmia. No conclusions could be made as to the cause of these phenomena. J. D. Rolleston.

Congenital cyanosis without auscultatory signs (*'Ann. de Méd. et Chir. Inf.,'* 1914, XVIII, *p.* 482).—**Grandjean.**—In cases of congenital cyanosis with a complete absence of any cardiac murmur, one habitually finds pulmonary stenosis and equality of thickness of muscle in the two ventricles. In the very young one also may find absence of the pulmonary artery or transposition of the great vessels. The heart often appears larger and heavier than normal, and the thickness of the two ventricles is about equal, and there is deficiency of part of the inter-ventricular septum. The pulmonary artery is diminished in calibre for its whole extent, or there may be a cicatricial ring at its commencement. That there is no murmur is due to the equality of pressure in the two ventricles, and to uniform diminution of the pulmonary artery. Cyanosis appears at birth, and then is often considered to be due to apparent death, but when respiration is established the blueness persists. The extremities remain cold, and there may be attacks of suffocation. Percussion shows the heart to be enlarged to the right, but no thrill or murmur is present. Tachycardia is frequent. Prognosis depends on the kind of malformation. In the absence of the pulmonary artery, life rarely lasts more than a few weeks or months; but with pulmonary stenosis and inter-ventricular perforation life may be prolonged up to fifteen years or so. The condition is one of lessened resistance, the lungs, being insufficiently nourished, may be attacked by tuberculosis or broncho-pneumonia; measles is often fatal. J. Porter Parkinson.

Insufficiency of the pulmonary valve (*'Amer. Journ. Med. Sci.,'* 1913, CXLVI, *p.* 541).—**H. B. Allyn** describes two cases of pulmonary regurgitation. The first was in a boy, aged 15 years. All the valves of the heart showed endocarditis, the aortic being incompetent as well as the pulmonary. The pulmonary valve cusps were four in number. The boy had suffered from rheumatism, but whether the endocarditis was regarded as purely rheumatic or as complicated by a secondary infection is not stated. The second case was a woman, aged 36 years. The heart post mortem showed mitral stenosis and aortic and pulmonary endocarditis. In this case there was a positive Wassermann reaction and no history of rheumatism. The author gives a *résumé* of the literature bearing on the subject.

REGINALD MILLER.

Persistent common arterial trunk in an infant, aged 6 months (*'Jahrb. f. Kinderheilk.,'* 1914, LXXX, *p.* 327).—**Z. von. Bókay.**—The infant had cyanosis of the face and extremities, but no clubbing of the fingers. There was no thrill to be felt nor murmur to be heard. Red cells numbered 7,000,000 and white cells 6000. Death took place suddenly from heart failure. The autopsy showed a persistent common arterial trunk, defect of the posterior part of the inter-ventricular septum, patent foramen ovale, persistent ductus arteriosus, hypertrophy and dilatation of the right ventricle and atrophy of the left ventricle. J. D. ROLLESTON.

Diagnosis and prognosis of congenital heart disease (*'Am. Journ. Dis. Child.,'* 1914, VIII, *p.* 185).—**C. H. Dunn.**—Out of 48 cases the diagnosis of congenital heart disease made in life was confirmed post mortem in 40, and in 8 a congenital heart lesion was found at necropsy, though careful examination during life had shown no evidence of a cardiac lesion. In 7 of these 8 cases the lesion was a patent foramen ovale alone, and in 1 a small opening in the interventricular septum as well as a patent foramen ovale. The lesions in the 40 cases were: Pulmonary stenosis alone, 16 cases; deficient ventricular septum alone, 3; patent foramen ovale alone, 2; patent ductus arteriosus alone, 1; congenital abnormality of the pulmonary artery, 1; deficient septum with open ductus, 9; deficient septum with pulmonary stenosis, 7; pulmonary stenosis with open ductus, 1. The following rules for diagnosis are given: (1) A case showing cyanosis with enlargement of the cardiac dulness or palpable thrill or both is one of pulmonary stenosis. If the child dies shortly after birth, the lesion is most probably pulmonary stenosis alone. If the baby survives, the pulmonary stenosis is probably combined with some other lesion. If the murmur is transmitted into the neck vessels, or is of "humming-top" variety, the additional lesion is probably open ductus arteriosus. If the murmur has neither of these characters, the lesion is probably deficient ventricular septum. (2) A case showing murmur and enlargement without cyanosis is probably one of deficient ventricular septum. If the murmur is not transmitted, this lesion exists alone. If the murmur is transmitted or has a "humming-top" character, the lesion is probably combined with open ductus. (3) A case showing murmur without cyanosis or enlargement, especially if the murmur is transmitted into the neck vessels, is probably one of open ductus arteriosus. If the murmur is of the "humming-top" character, this diagnosis is almost certain. The prognosis in pulmonary stenosis alone is grave, and death takes place usually soon after birth. In open ductus arteriosus the prognosis is very good. The patient develops normally, and signs of cardiac disease eventually disappear. In all the other forms of congenital heart disease there is evidence that the patient may survive to adult life, though the development and nutrition suffer to a varying degree, and the children are less resistant, especially to gastro-intestinal and infectious diseases. J. D. ROLLESTON.

Endocarditis in children (*'Arch. of Ped.,'* 1914, XXXI, *p.* 657).—**F. M. Crandall,** while fully appreciating the importance of myocarditis in the severer forms of heart disease in children, thinks that in some cases running a more favourable course the endocardium may be much more affected than the heart muscle. He regards as symptoms of myocarditis, irregular action of the heart or palpitation, syncope, cyanosis, and præcordial distress. Stress is laid upon the rapidity with which even a loud endocardial murmur may develop; a case in which such arose in eighteen hours is quoted.

REGINALD MILLER.

Chronic infective endocarditis (*'Arch. of Ped.,'* 1914, XXXI. *p.* 691).—**Eleanor C. Jones** and **Berta M. Meine** describe a case of a girl, aged 20 years, who suffered from chorea, followed by rheumatic fever and endocarditis, the latter causing death. Bacteriological findings showed staphylococci and a coarse Gram-positive streptococcus, which the authors think gets into the system in these cases by the tonsils.

F. R. B. ATKINSON.

Bradycardia and tachycardia in young children (*'Interstate Med. Journ.,'* 1915, XXII, *p.* 57).—**J. Zahorsky** reports two cases: (1) That of an infant, aged 15 months, who was small and poorly nourished and of a cyanotic hue. The pulse-rate was 54. The heart's apex was visible in the fifth interspace in the mammillary line and a loud systolic murmur was audible all over the chest. The terminal phalanges of the fingers were not clubbed, but were dusky red in colour. The fontanelle was large and the eyes were prominent. The writer considers the case to be one of heart block, but does not appear to have proved it by means of an electrocardiogram. (2) That of a girl, aged 3 years, who was the subject of paroxysmal tachycardia. For eight months she had had recurrent attacks of prostration following influenzal bronchitis. In the attacks, which lasted about two weeks, she lay prostrated, ate very little, vomited occasionally and breathed rapidly. When seen in the fourth attack the pulse-rate was over 200, the face was swollen and the eyelids puffy. The body had a slightly œdematous appearance and the liver was swollen. Respirations were 72, and there was a paroxysmal cough, but only an occasional sibilant *râle* in the lungs. The blood presented nothing unusual. The urine was 1010 and contained a trace of albumen and hyaline casts. Belladonna, adrenalin, bromides, and digitalis all failed to have any impression on the cardiac disturbance (*vide* BRITISH JOURNAL OF CHILDREN'S DISEASES. 1914, XI, *p.* 241.)

T. R. WHIPHAM.

Epigastric route for pericardiac paracentesis (*'Journ. des Praticiens,'* 1913, XXVII, *p.* 329).—**G. Blechmann** describes the various routes which have been made use of in aspirating pericardial effusions, and decides in favour of the sub-xiphisternal route as advocated by Marfan in 1911. In this procedure the extreme tip of the xiphoid cartilage is found by the index finger of the left hand, and the trocar is introduced under this, care being taken to keep exactly in the middle line. After passing along the posterior surface of the xiphisternum for a distance af 2 cm., the point of the needle is directed obliquely backwards and upwards until the pericardium is reached. It is claimed that this method reaches with the least possible danger and difficulty that part of the pericardial sac in which most fluid accumulates. In one patient the author successfully tapped the pericardium seventeen times.

REGINALD MILLER.

The use of strychnine and caffeine as cardio-vascular stimulants in the acute infectious diseases (*'Arch. Int. Med.,'* 1915, xv, *p.* 458).—**L. H. Newburgh,** from examination of patients in all stages of acute infectious diseases and in a few others who exhibited very low blood-pressure, came to the following conclusions: (1) There is no evidence that the vasomotor apparatus is injured in the acute infectious diseases. (2) The evidence at hand does not permit us to say whether the functional activity of the myocardium is seriously impaired in the acute infectious diseases. (3) Strychnine sulphate in medicinal doses does not increase the outflow from the heart, slow the pulse, or materially raise the blood-pressure; there is no logical basis for its use as a cardio-vascular stimulant. (4) Caffeine-sodio-salicylate in the doses employed (1½ gr. to 5 gr. subcutaneously) does not raise the blood-pressure or slow the pulse. J. D. ROLLESTON.

School Hygiene.

Biometric and eugenic studies of elementary school children (*'The Child,'* 1914, IV, *p.* 495).—**J. F. Halls Dally** describes the clothing of 948 Jewish children. 112 of 638 boys examined were properly, and 526 insufficiently or over-clothed. Under-clothing was sufficient in 122, excessive in 37, and insufficient in 479. Outer clothing was sufficient in 569, excessive in 7, and insufficient in 62. As examples of insufficiency of clothing are quoted 38 boys clad in shirts, trousers, and coat, as over-clothing a case in which a boy was clothed in vest, shirt, jersey, stays, combinations, trousers, waistcoat, and coat. 113 of 310 girls examined were sufficiently clad, and 197 insufficiently or over-clothed. Under-clothing was sufficient in 144, excessive in 89, insufficient in 77. Outer clothing was sufficient in 238, excessive in 57, and insufficient in 55. As an example of deficiency a girl clad only in a vest, chemise, and dress is noted. As one of excess, a girl wearing vest, chemise, combinations, two petticoats, three bodices, shirt, jersey, and dress. A shirt in boys and a chemise in girls are much more frequently worn than a vest in either sex. If the under-clothing is excessive the increase is usually of chemises in girls and shirts in boys. Cotton is the commonest material of which vests and shirts are made, flannelette next, while cotton-wool mixture, wool, and flannel, are very infrequent.

CHRISTOPHER ROLLESTON.

Review of four years' school work (*'Wien. klin. Rundschau,'* 1914, XXVII, *p.* 367).—**L. Wolfer** examined the teeth, eyesight, and for scoliosis, 5500 school children during this period. Sixty-five per cent. of all pupils suffered from bad teeth, and as a result of instruction to both parents and children this number had fallen to 56·6 per cent. The cases in Class I amount to 75 per cent. and these fell to 49·7 per cent. when the higher classes were reached. Abnormal eyesight increased as the higher classes were reached from 16 per cent. to 32 per cent., but fell as a result of instruction to the parents and children from 25 per cent. in all classes to 17·6 per cent. The scoliotic curve increased from Class I to Class III when it began to fall steadily. Proper care and instruction of all classes of pupils lowered this curve from 33·1 per cent. to 17·9 per cent. F. R. B. ATKINSON.

The true aim and purpose of the routine inspection of children in school (*'Journ. State Med.,'* 1914, XXII, *p.* 693).—**John Priestley** points out that by the routine inspection of children in school is meant the medical inspection of every child attending school which we are required by the Board of Education to perform three times during the child's school life. These routine inspections have succeeded in drawing to themselves a disproportionate amount of attention. Starting with the fact which the statistics of the medical inspection in England have abundantly demonstrated, viz. that school medical inspection is mainly, if not entirely, concerned with vast numbers of chronic ailments handicapping children in their life and education, but not bad enough to prevent attendance at school, the great central work of medical inspection is to secure the proper treatment of these ailments. In this beneficent work the routine inspection plays its part, and its true aim and purpose is to segregate and classify the mass of chronic ailments, so that each case may be carefully studied and followed up. J. ALLAN.

The school and the home (*'Journ. State Med.,'* 1914, XXII, *p.* 689).—**H. R. Kenwood** makes a strong plea for a greater co-ordination of home and school life, which would tend to benefit the child mentally, morally, and physically. This co-operation of the home with the school is more particularly necessary for the moral training of the child—of which hygienic training is but a form; but it is also necessary for the maintenance of the child in the best conditions of discipline, feeding, recreation, and of rest to benefit to the full from school education. The author briefly sketches how such interchange between home and school could be carried out, and a necessary provision would be the appointment of a "school home visitor." He remarks that the Board of Education has issued excellent counsel to teachers with reference to their duties to the child; it would be helpful if a simple statement were issued to parents, indicating the respects in which their co-operation is needed in the educational interests of their offspring.

J. ALLAN.

The medical treatment of school children in rural districts (*'Journ. State Med.,'* 1914, XXII, *p.* 602).—**A. E. Williams** points to the difficulties of the medical treatment of school children in scattered country districts, and discusses the methods adopted in Flintshire for dealing with children of school age suffering from defective vision, dental caries, ringworm, and other skin diseases, verminous conditions, etc. J. ALLAN.

Estimation of physique and stamina for school purposes (*'Lancet,'* 1915, I, *p.* 115).—**A. A. Mumford** points out that by "physique" we generally imply the attainment of such bodily structure and organisation as enables a person to put forth mechanical energy through the muscular system; by "stamina" we generally imply the capacity for sustained vital activity, particularly when endurance has to be sustained against disintegrating influences, whether of strenuous work or of disease. Suggestions are made as to standards of physique and stamina. The estimates or criteria suggested by the experience of medical inspection and examination of adolescent children attending school and hospital, tend to separate into two groups: (1) Those which depend on the rate and degree of bodily development; (2) those based on standards of cardiac efficiency. Further estimates of physique and stamina may be made: (*a*) By examination of the respiratory apparatus, (*b*) from the condition of the musculature of neck and spine, (*c*) from a consideration of the general muscular build. There are now practically three natural physiological types of the neuromuscular system. (1) Adapted for the exhibition of massive weight. (2) Adapted for both bodily agility and bodily strength. (3) The third type needs particular care and supervision during school life if he is ultimately to put forth his full innate powers. The larger limb muscles and the bony frame work are comparatively feebly developed. The nervous energy, though it may be considerable in amount, is irregularly distributed and tends to manifest itself either in some special handicraft or in some special intellectual channel, such as great language facilities, or its near ally, the mathematical faculty, or great imaginative faculties. Regarding the physique of the modern secondary day school boy (in Manchester), the author says that careful comparison shows that the modern boy is taller, broader-chested, and heavier than the boy of a generation ago. He also maintains his level in athletic out-door activities, and more than maintains them in university attainments. J. ALLAN.

Discussion on rheumatic infections in relation to school life ('*School Hygiene*,' 1915, VI, *p.* 1).—**F. J. Poynton** emphasises the importance of the disease by stating that the foundations of mitral stenosis, which is usually fatal before forty-five, are laid, as a rule, in the first fourteen years of life. Tonsillar infection he regards as very important. The *Strepto-diplococcus rheumaticus* can be cultivated from cases of acute angina and from the crypts of enlarged unhealthy tonsils. Further, acute rheumatism often follows tonsillotomy. Yet, on the whole, enucleation of the tonsils in the rheumatic is recommended, and the collection of facts demonstrating the after-effects of this operation on the life-history of rheumatic children is strongly urged. Chorea is regarded as a meningo-encephalitis due to the strepto-diplococcus, which has been recovered from the cerebral tissues even when endocarditis is absent. Chorea is a disease of the poor; it is rare in the capitalist class. No importance is attached to diet or to oral or dental diseases.

James Kerr stated that the majority of children labelled overpressed, anæmic, or tubercular are really rheumatic. He laid stress upon heredity, marked anæmia, and pain about the hamstrings as highly suspicious of rheumatic infection. Nervous symptoms, even when true chorea is not present, require exclusion from school. Inquiry cards on all cases of rheumatism are to be issued with full details as regards signs, symptoms, and a history of the facts bearing on the disease.

F. Langmead investigated 2556 children, 844 being boys, 838 girls, and 874 infants of both sexes. 59 boys and 74 girls—a total of 133 and a percentage of 5·2—were classed as definitely rheumatic. This number did not include cases of chorea or severe uncompensated heart-disease which were away from school. 115 of the 133 rheumatic children showed some sign of cardiac disorder at the time of examination. The mitral valve was affected in 59 and the aortic in only 1.

J. Graham Forbes had found the *Strepto-diplococcus rheumaticus* of Poynton and Payne in a small number of cases, but it is doubtful if this organism is the sole specific bacterial factor in the production of rheumatic lesions. *S. salivarius* and *S. fæcalis* have both produced endocarditis and arthritis when injected into animals.

J. F. R. Shrubsall found that 4679 out of 204,113 children inspected in 1911 showed physical signs pointing to cardiac affectlon. The frequency among "leavers" is twice as great as among entrants. Of 743 cases of cardiac disease admitted to the invalid schools as many as 536 were cases of mitral incompetence, 26 of mitral stenosis, 108 of double mitral disease, 41 of aortic and mitral disease combined, 28 of aortic incompetence, and 4 of aortic stenosis. The period between the initial symptoms and the appearance of definite signs of heart-disease in no case exceeded four years, and on an average was under eighteen months. 118 cases of congenital disease were investigated. 43 of these, or 26·5 per cent., were cases of pulmonary stenosis; 27, or 22·9 per cent., were examples of patent septa; 31, or 26·4 per cent., presented basal systolic murmurs—suspicious signs of patent septa; a persistent ductus arteriosus was present in 3, or 2·5 per cent.; and aortic stenosis in 14, or 11·9 per cent. Definite cyanosis was noted in 57·6 per cent.; in 5·9 per cent. there was marked pallor, and in 2·5 per cent. a florid complexion. Notable clubbing of the fingers occurred in 49·2 per cent. Eight to 15 per cent. of the cases admitted to the invalid schools have died, while 30 per cent. have been able to return to the ordinary schools. The maximum number of cases occur in the central areas of London. Poor areas and frequency of heart cases coincide in certain localities. Cases of heart-disease were found to be grouped along the course of old river valleys or water-courses, such as the Wandle, Ravensbourne, Effra, Fleet, Westbourne, and Regent and Surrey Canals.

CHRISTOPHER ROLLESTON.

Medical inspection in relation to special schools (*'Journ. State Med.,'* 1914, xxii, *p.* 594).—**E. T. Roberts** maintains that the two chief objects which must be considered in the course of medical inspection are: (1) Improving the health of the child where necessary, so that the greatest benefit may be gained from the education provided in the ordinary school; and (2) where the abnormal child cannot be made normal, or only so after months or years of treatment, then, if he be not too ill for any education, the special school must be selected which is best suited to his mental and physical conditions. After discussing the routine of medical inspection in Glasgow the author describes under the following heads the means for dealing with defective children: (1) Schools for mentally defective children; (2) schools for physically defective children or invalid schools; (3) residential open air schools; (4) schools for semi-deaf and semi-mute children; (5) blind children or partially blind children; (6) truant children; (7) industrial schools; (8) Clyde industrial training ship "Empress" for destitute and homeless boys. In conclusion he briefly refers to the provisions made in his district for the medical and dental treatment of necessitous school children.

J. ALLAN.

The present position of ophthalmology in school hygiene (*'Med. Press,'* 1914, ii. *p.* 218).—**R. A. Askins** emphasises the importance of spectacles in the conservation of vision in school children, and makes a strong plea for their more scientific employment. He urges (1) that the school doctor must be a trained ophthalmologist. Till this is the case we can have little hope of good eye work being done in schools. (2) That all cases of myopia should be picked out and receive a much more careful supervision than is the case at present. The ophthalmologist will discover more cases of myopia in the infant school than he will anticipate. All cases of myopia in the upper school should be known, got into glasses, and kept under very careful supervision, especially with a view to levelling up the glasses. (3) The recognition and careful consideration of cases of hypermetropia, and especially before ordering glasses for lower hypermetropia, the estimation of the degree of the defect being a primary consideration. Secondly, the substitution of the principle of encouraging the development of the ciliary muscle rather than taking its work from it. No hard and fast rule can, of course, be laid down. Every case must be dealt with on its own merits, including the physical condition of the child, the symptoms produced, and the degree of hypermetropia. (4) As to squint. This problem can never be dealt with satisfactorily until it is, to some extent, at any rate, taken over by the school doctor. Many cases require supervision extending over long periods, and treatment that can only be carried out in school—*e. g.* orthoptic treatment. Till this is done thousands of eyes will be let go irretrievably blind. J. ALLAN.

The education of the semi-blind ('*Glasgow Med. Journ.*,' 1914, II, *p.* 417).—**W. B. Inglis Pollock** divides children of this class into two groups. The first group is composed of children suffering from various diseases of the eyes, in which the eyesight is so defective that they are unable to read ordinary print or even specially large type. The second group is composed of children suffering from excessively high degrees of myopia. They are able to read ordinary print by holding it close to the eyes, which increases their myopia, and thus a vicious circle is set up. Children suffering from these diseases of the eyes are being treated by educational authorities in three different ways. By the first method they are permitted to attend school, but are not allowed to do any near work. By the second method children with serious defects of vision or diseases of the eye may be entirely excluded from school. By the third method such cases may be sent to a school for the blind. The author supports the treatment of such children in classes for the semi-blind devised by Bishop Harman, who lays it down as an absolute essential for success that the class shall be placed in an ordinary school for normal children and worked as an integral part of this school. Oral teaching is given with the normal children for such subjects as can be taught orally. All literary work must be learned without books, paper, or slate. A full use is made of every kind of handicraft that will develop attention, method, and skill with the minimum use of the eyes. Drill and games enter largely into the curriculum. In the opinion of the author the establishment of such classes allow children with serious defects of vision to obtain a good education, with all the benefits of regular school work. The medical treatment they may be receiving does not interfere with their work, nor do these special methods of education harm their eyes. The children only require to attend their dispensary or school clinic once a month in many cases. Many of the parents welcome the classes, since by these means their children resume school attendance, and they help by watching the children at home. Each case should be watched carefully. Their myopia or disease will probably improve to such an extent that there will be little fear of its progressing. The worst cases will pass the critical period of seven to fourteen years, when the eyes are soft and tender, receiving an all-round education, but without books. The establishment of such classes will undoubtedly act as a powerful preventive of many of the cases of separation of the retina and macular atrophy resulting from myopia, which end in blindness, and are commonly seen in our hospitals and in private practice. J. ALLAN.

The economic importance of diseases of the ear in school children ('*New York State Journ. Med.*,' 1914, XIV, *p.* 368).—**J. E. Sheppard** after reviewing this important question, comes to the conclusion that diseases of the ear seem to be of economic importance in school children, because: (1) In their acute forms they lead to a certain amount of absence from school, and absences are a most potent factor in retardation; (2) in their suppurative forms they become a distinct menace to the life of the individual; (3) in their more chronic forms they result in defective hearing, the physical defect constituting the greatest bar to progress in school; (4) through impairment of hearing they cause a large proportion of the total number of defectives and incorrigibles, truants, and idlers, a portion of whom go later to join the ranks of the criminal classes, becoming an expense and a charge to the State reformatories and prisons; (5) through impairment of hearing they swell largely the ranks of the so-called "repeaters," to educate whom costs an entirely disproportionate amount, besides interfering materially with the education of their normal hearing class mates; (6) by virtue of their causation, through impairment of hearing, they are an element in the production of stoop shoulders and flat chests, which result in increased liability to tuberculosis; (7) finally, sufferers from impaired hearing require for their adequate education separation from the normal hearing, and teaching in limited classes, and with extreme deafness residence and teaching in special institutions where articulation and lip-reading must be taught in order to avoid the otherwise resulting deaf-mutism. J. ALLAN.

Dental clinics (*'Journ. State Med.,'* 1914, XXII, *p.* 426).—**Lewis Williams** describes the routine of examination and treatment. He believes that dental treatment of school children is one of the most important branches of preventive medicine, and he looks forward with confidence to the time when all children will leave school possessing sound dentures. The application of dental treatment not only relieves much pain and suffering on the part of the children, but it provides the keynote to perfect mastication, efficient digestion, and assimilation of food. It is conducive to a condition of good health and better physique, it is a valuable preventive against disease, and, lastly, it secures for children a physical condition which enables them to enjoy life and attend school regularly. J. ALLAN.

Reviews.

ÉTUDES CLINIQUES SUR L'INSUFFISANCE SURRÉNALE, 1898–1914 (CLINICAL STUDIES ON ADRENAL INSUFFICIENCY). By ÉMILE SERGENT, Médecin de l'Hôpital de la Charité. Pp. 494. Paris: Maloine, 1914.

THE author is well known for his work on renal inadequacy, especially perhaps for the sign of this condition, "the white line," which is exactly the reverse of the well-known *tache cérébrale*, and was first observed in the pseudo-meningitic form of acute adrenal inadequacy. In 1898 together with Bernard he began to evolve the conception of acute adrenal inadequacy and to separate it from Addison's disease, and since then he has steadily worked at the subject. The present volume is a collection of his forty-one previous contributions, and is divided into four parts; in the first, adrenal inadequacy is defined and described; in the second, its clinical characters and diagnosis are dealt with; the third is devoted to the part played by this condition in various diseases, such as infective fevers, chorea mollis, cardiac failure, the grave vomiting of pregnancy, tuberculosis, and in the severe symptoms sometimes seen after injection of salvarsan; and the fourth contains the practical application of the conception of renal inadequacy or the therapeutic uses of adrenal gland substance and adrenalin. In the clinical section the pseudo-meningitic and encephalopathic forms of acute adrenal inadequacy are described, and the "white line" sign is defended against the adverse criticisms in which Bernard has taken a prominent part. The therapeutic section contains much interesting matter; in cases in which asthenia and depression are the most prominent symptoms the extract of the adrenal gland as a whole should be given, either fresh (1½–2 grammes daily) or as the dried extract, such as Carron's (one to three cachets of 0 30 grammes daily); when low blood-pressure is the predominant feature, especially in typhoid fever, adrenalin solution (20–30 minims of 1 in 1000 solution) is sufficient. Except in shock and syncope, when hypodermic injections are indicated, adrenalin should be given by the mouth. The account of the author's views is clearly and attractively written.

H. D. R.

DER SALVARSANTOD. SEINE URSACHE UND SEINE VERHÜTUNG. INTRAVENÖSE ODER INTRAMUSKULÄRE SALVARSANINJECTION? Von Dr. CARL SCHINDLER. Mit 5 Tafeln und 1 Abbildung im Text. Berlin: S. Karger, 1914. Pp. 184. Price M5.80.

IF salvarsan has done nothing else it has enriched the literature of toxicology and morbid anatomy. Dr. Carl Schindler attributes death from salvarsan to the direct effects of arsenic on the circulatory system, causing stasis, thrombosis, and hæmorrhage. Thus, even some German writers now acknowledge the toxic effects of salvarsan—a fact long ago recognised by French observers. Schindler points out that most of these fatalities have occurred after intravenous injection, few after intra-muscular injection of an aqueous solution of salvarsan, and none after injection of an oily suspension. In fact, the present book is a plea for intra-muscular injection of a 40 per cent. oily suspension known as "Joha." The author says he has used this for three and a half years, and considers its effects as good as those of intravenous injection, without the danger of the latter. The action of intravenous injection is short and insufficient, and hence has to be frequently repeated; the action of intra-muscular injections, on the other hand, is slower and more continuous. Schindler says that no necrosis of muscle occurs if care is taken to avoid vessels. The gradual action of salvarsan introduced intra-muscularly is said to avoid the danger of the drug when suddenly introduced into the circulation by intravenous injection.

C. F. M.

EVOLUTION AND DISEASE. By J. T. C. NASH, M.D. Bristol: John Wright & Sons, Ltd., 1915. Price 3s. 6d. net.

ANYTHING written by Dr. Nash is certain to afford interesting reading, and this latest volume from his pen is no exception to the rule. In his erudite and philosophic study of evolution and disease he is at his best, and the careful perusal of this volume cannot fail to suggest to others fresh fields for future research. The present volume is based on the author's Chadwick Public Lectures on "The Evolution of Epidemics." In the first three chapters he gives a brief historical *résumé* of records of mediæval epidemics. The remaining chapters touch on the evolution of pathology; and various factors in the evolution of epidemic disease are considered, particular attention being given to bacteriological evidence. The concluding chapter on war as a factor in the evolution of epidemics will be read with special interest at this time. The book gives an excellent account of the progressive development of sanitation, and it should appeal to all medical men, especially those engaged in public health work. J. A.

ANNUAL REPORT FOR THE YEAR 1913 OF THE SCHOOL MEDICAL OFFICER TO THE STAFFORDSHIRE COUNTY COUNCIL.

THE work of the medical staff, consisting of one medical man and five lady physicians, comprises the inspection of 375 schools, and of 16,578 scholars out of the 83,254 on the rolls.

Out of 12,630, or 43 per cent., ailments requiring treatment, 5443 were known to have received some kind of attention, 2216 received no treatment, while no information was forthcoming as regards 4980 cases.

Failure to obtain treatment was analysed in 1797 cases. In about a quarter the cause appeared to be poverty, in rather more than a quarter it was obstinacy, and in almost half the cases more or less frivolous excuses were given.

The Board of Education has recently issued statistical tables the utility of which Mr. Priestley criticises. He points out that the mixture of age and sex which these tables involve makes them useless for scientific purposes, although their compilation entails enormous labour.

Drs. Alice Maclean and Agnes Nicoll contribute a discussion on mouth-breathing, aprosexia, and high palates.

They found that there was an excess of dull and backward children among mouth-breathers. This excess depended on deafness. If the latter condition was absent mouth-breathing children showed about the same proportion of dull children as the general average. It is then shown that mouth-breathing and high palates go together. A distinct, but not very large, preponderance of dull children have high palates, and this is due to the fact that children with high palates are usually mouth-breathers, and consequently deaf. It is further shown that high palates are more common among the rachitic than the usual school population. A state of feeble circulation not associated with failing heart is described by Mr. Priestley. Hands, cheeks, ear-tips and nose look as if they had been dipped in bilberry juice. Boys and girls are about equally affected. There is a marked increase in the frequency of its occurrence after the age of eight. It is common in dark-haired, strumous children. It is not associated with organic heart trouble.

The condition of general health of 1074 children, and of 243 more with sound dentures was compared. There was little to choose between the two. The state of nutrition was uninfluenced.

1255 of 20,140 examined had some sort of heart affection; 5 per cent. of these were functional and 1 per cent. organic. With regard to the former a pulmonic murmur was the most common sign, followed closely by a tricuspid murmur. Mitral affections formed 87·6 per cent. of the whole series of organic disease.

Girls were slightly more affected than boys.

Headache was the commonest symptom of which complaint was made. A history of rheumatism was only obtained in 18·6 per cent. of the cases.

Enlarged tonsils were only found in 15 per cent. of heart cases as compared with 20 per cent. of all scholars.

The report is one of considerable value and repays perusal.

C. R.

Report of the Minister of Public Instruction, Victoria, for the year 1912–13. Melbourne. Price 4s. 3d.

12,439 children were inspected by Mr. Havey Sutton and two lady inspectors, 2079 of these were High School scholars.

There are over 175,000 children in the elementary schools of the province, so it is no surprise to hear that visits are only made once in every two years.

The system of examination is superior to that in force in this country. Children are more thoroughly examined, and the age of selection shows a riper judgment.

Special reports are made on the treatment of ophthalmic and dental defects, eye conditions in certain districts, growth of Australian children, Bush nursing, and other kindred subjects. As there are only three ophthalmic clinics in the province, apart from those in the metropolis, the optician flourishes like a green bay tree, and Mr. Sutton recommends the travelling ophthalmic specialist. An experimental dental clinic, to cost in all £750, is about to be established.

In the special inquiry into eye conditions, 5 per cent. were found to be suffering from trachoma and 30 per cent. from conjunctivitis.

In the smears from the latter the diplo-bacillus of Morax Axenfeld predominated and in only a few were cocci and the Koch-Weeks bacillus discovered.

Squint was discovered in 16 per cent. of the scholars in one school. With regard to growth, not only are the height and weight recorded, but the minimum measurement of the chest on expiration and the maximum on inspiration are also noted, supplemented by lateral and antero-posterior mensuration with calipers. The analysis of 5672 such records has been made; 60 per cent. of the 5672, or 3377, were Australians of the second generation.

Throughout school life the boy's chest in complete expiration is larger in all diameters than the girl's. As the boy grows his chest becomes wider than the girl's, although the antero-posterior measurements are about the same in both sexes. Therefore the boy has the flatter, the girl the rounder, chest.

As the boy grows it follows that forward expansion during inspiration increases, while lateral expansion is unaltered. In the girl, on the other hand, expansion forwards remains about the same at fourteen as at six, while the lateral expansion rises slightly but definitely. To sum up, the girl heaves in the flanks when she breathes, the boy like a bellows held on the flat.

C. R.

Rutland County Council Education Committee: Annual Report of the School Medical Officer for the Year 1913. By Christopher Rolleston, M.A., M.D.Oxon., M.R.C.P.Lond., M.R.C.S.Eng., County Medical Officer of Health and School Medical Officer. Leicester: W. Thornley & Son.

Reports based on the medical inspection of school children always afford interesting reading, and the one before us proves no exception to the rule. The statistics of the routine inspection seem to indicate that good progress is being made, but apparently there is in some places still room for improvement in the sanitary arrangements of the schools. Much useful and valuable information may be gleaned from the pages of this report, which should be studied by all engaged more especially in pædiatric work.

J. A.

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Original Articles.

ON THE BACTERIOLOGY OF CEREBRO-SPINAL FEVER.*

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WHEREAS the clinical diagnosis of cerebro-spinal meningitis may at times present very real difficulty, the laboratory examination of the cerebro-spinal fluid can generally establish the diagnosis of the disease in a very short time. In some cases the fluid is obviously turbid on removal from the body. When that is the case the diagnosis of meningitis is certain, but not the particular kind of meningitis; it might be meningococcal, pneumococcal, influenzal, streptococcal, etc. It is in distinguishing the variety of meningitis, and thereby giving a clue to the appropriate treatment of the case, that bacteriology comes to our aid.

The organism of cerebro-spinal meningitis was first carefully described by Weichselbaum (11) in the year 1887, though it had probably been seen previously by other observers (Marchiafava and Celli (9) in 1884; Leichtenstern (7) in 1885).

Weichselbaum found it in the ventricular fluid and meningeal exudate of six out of eight cases of primary apparently sporadic cases of meningitis. It was a Gram-negative diplococcus, and as it often occurred in numbers within the leucocytes he named it the

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* Being a contribution to the discussion on "Cerebro-Spinal Fever," at the Harveian Society, on April the 22nd, 1915.

Diplococcus intracellularis meningitidis. He showed that it was an obligatory aërobe—that is to say, it would grow only in the presence of air or oxygen—and that its optimum temperature was 37° C. He found also that it grew best on media containing animal proteins, and even on these media tended to die out very rapidly unless subcultured every day or two. Weichselbaum's observations were forgotten for some years, and it was not until 1895 that interest in them was revived. In the meantime, namely in 1891, Quincke had introduced his method of lumbar puncture, whereby the accurate clinical study and pathological diagnosis of meningitis were enormously advanced.

In 1895, Jaeger (5) isolated a diploccocus from a number of cases of meningitis, which differed from Weichselbaum's meningococcus in several respects. While it was Gram-negative in sections, it was Gram-positive in the exudates and in cultures ; it grew well on ordinary agar and in broth at both room and body temperatures ; and it was considerably more resistant than the Weichselbaum diplococcus to heat, drying, and such like external influences. In the following year Heubner (3) isolated a similar Gram-positive diplococcus from a few cases of the disease. Other observers appeared to confirm this observation, and the result was the belief that there were two types of the meningococcus—the Weichselbaum type and the Jaeger-Heubner type.

The apparent result of the more recent investigations of epidemics of meningitis in Europe and America, aided as they have been by the fermentation tests and serum reactions (agglutination, absorptive power, and fixation of complement), has been to establish the claims of the Weichselbaum diplococcus as the causal agent of cerebro-spinal fever. This will be gathered from the following statement of Ledingham (6) in his recent article on "The Bacteriology of Cerebro-spinal Meningitis" : "The meningococcus of Weichselbaum is universally regarded as the essential specific cause of epidemic cerebro-spinal meningitis, as also of certain forms of sporadic meningitis." Possibly, however, the facts may not be so simple as this, for in very recent papers by Hort, Lakin, and Benians (4) doubt is thrown upon the generally accepted view that the Weichselbaum meningococcus—as we know it—is the infective agent in meningitis. These observers think it possible that "in cerebro-spinal fever the meningococcus might prove to be a late non-infective phase in the life-history of a minute organism not yet discovered, which is only infective in its earlier stages, that is to say, it is only in these early stages that it causes the disease." They have examined the urine, blood, and cerebro-spinal fluid of a number of acute cases of cerebro-spinal fever, and from the great majority of these—especially from catheter specimens of urine—they have isolated the Gram-positive and Gram-negative organisms of Jaeger. They have made the interesting observation that the Gram-negative diplococci in urine (morphologically indistinguishable from the meningococci or gonococci), on cultivation, appeared to merge into Jaeger's organism, colonies of Gram-postive and Gram-negative rounded cocci alone surviving. Further, from a specimen of urine, *filtered through a Berkefeld filter*, they were able to grow colonies of a very pleomorphic organism, a film of a *single* colony showing (1) Gram-negative diplococci like meningococci, (2) also a few Gram-positive forms, (3) small Gram-negative bacilli, (4) Jaeger's organism, (5) Gram-positive diplococci and other forms. From this it would appear that the urine in cerebro-spinal fever may contain an ultra-microscopic form of the infective agent, and whether subsequent investigation confirms or disproves this theory, for the present it will be a wise precaution to disinfect the urine in all cases of the disease.

Before leaving the historical part of the subject, reference must be made to the diplococcus described by Still (10), in 1898, in the posterior basic meningitis of infants. Still's organism closely resembles the meningococcus of Weichselbaum, but was said to grow more readily on the ordinary culture media and to be more hardy than the Weichselbaum coccus. If they differ at all they do not do so *specifically*, but only as *variants* of the same organism.

Next, a few remarks as to the morphology and biology of the meningococcus. It is a small, Gram-negative diplococcus, often kidney shaped, with the flattened surfaces opposed and with a narrow space between them. Morphologically it is identical with the gonococcus, and, like it, is often found in considerable numbers within the leucocytes. It is a difficult germ to grow, and for its isolation requires serum, ascitic fluid or similar protein-containing substance in the nutrient medium. After a variable number of sub-cultures on such a medium it will grow on ordinary media, but apparently it cannot lead a saprophytic life outside the human body. It is very susceptible to cold and to drying. The former weakness has to be borne in mind when cerebro-spinal fluid is to be examined for meningococci. The fluid should be examined as soon as possible after removal from the body if cultures are to be made, and during the interval between removal and culture it should be kept at or near the body temperature. It is generally stated that the meningococcus will not grow below 25° C., though Lieberknecht (8) has shown that growth at temperatures below 37° C. is favoured by the addition of hæmatin to the culture medium.

The meningococcus ferments glucose and maltose with the production of acid; the gonococcus ferments only glucose, and the *Micrococcus catarrhalis,* which may be confused with the meningococcus when naso-pharyngeal swabs are being examined, ferments neither glucose nor maltose.

Some strains of meningococcus are agglutinated by the serum of meningitis patients, or by an artificially prepared anti-meningococcus serum, but Elser and Huntoon (1 and 2), Arkwright and others have found that a considerable proportion of strains of meningococcus are not agglutinated by a monovalent serum.

The meningococcus in the human body.—Many observers have found the meningococcus in the blood in cases of cerebro-spinal meningitis. Elser found it in eleven out of forty-one cases. Possibly, if the citrated blood of patients were incubated, instead of adopting the usual procedure of adding a few cubic centimetres of blood to nutrient broth, a larger percentage of positive results would be obtained. In a number of recorded cases the meningococcus has been found in the blood without marked, or even any, evidence of meningitis. Such pronounced cases of meningococcal septicæmia are usually, if not always, fatal; but it is highly probable that cerebro-spinal meningitis is always *primarily* a blood infection, and that the brain and spinal cord are simultaneously infected from the blood. If the infection of the meninges were due to a direct spread from the naso-pharynx, we should expect the brain to be infected considerably earlier than the spinal cord.

The meningococcus also occurs in the naso-pharynx of a large number of patients early in the disease, and it has been found, though rarely, in other parts of the body. Lastly, but not least in importance, it occurs in the cerebro-spinal fluid and meningeal exudate.

The cerebro-spinal fluid in meningococcal meningitis.—In a marked case of cerebro-spinal meningitis the fluid is usually turbid, often markedly so, and after centrifuging shows a thick sediment like creamy, viscid pus. Under the microscope this consists mainly of polymorphonuclear leucocytes with a small admixture of mononuclear cells. Stained by Gram and counter-stained with dilute carbol fuchsin or Bismarck brown, meningococci are generally seen —often in very large numbers—within and outside the cells. They are Gram-negative, and are stained red or pale brown according to the counter-stain employed.

The albumin of the fluid is much increased; from 0·02 per cent., the normal amount, to 0·5 or 0·6 per cent. or even more. Sugar is generally absent. Primary cultures from the purulent sediment planted on ordinary agar will often grow the meningococcus, as the "pus" in the sediment furnishes sufficient albuminous matter for the needs of the organism. As previously stated, the fluid should be cultured as soon as possible after removal and have been kept warm in the interval. Subsequent subcultures fail to grow on ordinary agar, and require for their success a serum or ascitic fluid agar. Even better results are obtained with Kutscher's medium, which is a serum placenta agar. Sometimes when the direct examination of the fluid fails to reveal the meningococcus or shows only a few cocci, incubation of the fluid itself overnight at 37° C. will allow the organisms to multiply to such an extent that they are easily found in the sediment and grow luxuriantly on Kutscher's medium. I have found this on several occasions recently.

Effects of serum treatment on the cerebro-spinal fluid.—I cannot enter here into the details of treatment, but shall just mention the changes which occur in the cerebro-spinal fluid consequent upon lumbar puncture and the intrathecal injection of Flexner's anti-meningococcal serum:

(1) Diminution in the amount of albumin. In a recent case of Dr. Frederick Batten's, in which I made daily examinations of the cerebro-spinal fluid, the albumin was 0·55 per cent. (before the injection of serum) and 0·45, 0·3, 0·3, 0·22 per cent. on successive days, the patient receiving daily intrathecal injections of 10 or more c.c. of serum.

(2) Rapid diminution in the number of cocci, and more particularly of the extra-cellular cocci. Those which persist are almost entirely intra-cellular. This was well seen in the case just referred to; on the first day, before serum was injected, the cocci were very numerous and were extra- and intra-cellular. On the second day, after only one injection of serum, they were much diminished in number and practically all intra-cellular; on the fourth day no cocci could be found in films of the sediment, and on culture the fluid was sterile. When this result is attained, the serum injections should no longer be given.

(3) Diminution in the number of polymorphonuclear leucocytes ("pus" cells) and consequent clearing of the fluid. During convalescence the fluid may become more turbid again for a day or two and show an increase in the number of polymorphs. Later on, as the polymorphs diminish, the mononuclear cells increase in number.

(4) Return of the sugar.

Finally, it may take several months for the fluid to become quite normal again.

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PULMONARY TUBERCULOSIS IN CHILDREN.*

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TUBERCULOSIS in children, and especially pulmonary tuberculosis in children, presents many difficulties. Although we have many very simple tests which may be applied to assist in the diagnosis of tuberculosis, we have nothing to aid us as to whether we are dealing with latent or active tuberculosis, except our experience and our stethoscope. It is very important to the child that we should be able to differentiate. To be notified nowadays as a case of pulmonary tuberculosis means much in the favour of the child. It also means much against it. I have been very much impressed with the effect of notification on the child. In the ordinary way of notification the home is visited by some official of the Public Health Department, who has naturally no knowledge of the difference between latent and active, or anatomical and clinical tuberculosis; but is armed with the methods of dealing with definitely infectious pulmonary tuberculosis. The windows must be opened, the curtains and the carpets removed, etc. The child must sleep alone, which means, in the present state of the housing of the working-classes, that, if carried out, the rest of the family is generally over-crowded. The child must have extra milk and good food, the extra milk generally not being possible in the present financial position of the working-classes, without upsetting the family budget. The strongest impression left upon the mother of the family is that the child is a consumptive and infectious, and consumption to the great majority of people still brings up a mental picture of a prolonged illness ending inevitably in death. The child is immediately treated differently from the rest of the family; she is given the little extras, is not forced to take the ordinary food that is prepared, and becomes very much spoilt. She goes to school when she pleases, because the mother feels she cannot force her if she feels ill, knowing she is consumptive—a fact which a child very soon learns to trade upon. And as we are very hopeful of the ultimate cure of very many of these cases, she loses much that would be helpful to her later in life. At the same time the family and relations all talk with bated breath of "poor Mary, who is not long for this world." The mental atmosphere which grows around Mary is very unhealthy, and cannot assist her in her cure. If she is a case of latent or only suspected tuberculosis she is, in my opinion, very much better left unnotified, but kept under observation, although we lose, of course at present, the benefits to be gained by the improved hygiene of the home which has been instilled during the visits of the public health officials. The fact that the child is notified also prevents her from obtaining the benefits of convalescent home treatment, which in many cases is all that is required to restore her to health. It is very necessary for us, therefore, to safeguard the child by being sure of our diagnosis. That our ideas widely differ as to what constitutes pulmonary tuberculosis in children is evidenced by the fact that the amount of notifiable pulmonary tuberculosis in school children ranges with various observers from ½ per cent. to 30 per cent.

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* A paper read before the Association of Registered Medical Women, on March the 9th, 1915.

Statistics taken from post-mortem work and from specific tests such as Von Pirquet's and Calmette's show a high degree of infection by the tubercle bacillus in early childhood. The post-mortem figures for children vary within wide limits. Thus Baginsky in Berlin found 18 per cent. tuberculous, Comby in Paris 38·5 per cent., Hamburger in Vienna 40 per cent., and Müller 43 per cent. With regard to the organs affected there is also much variation. Holt, in an analysis of 119 autopsies on tuberculous children, found the lungs affected in 99 per cent. and the bronchial glands in 96 per cent. Hamburger, in a series of 160 cases, found the lungs implicated in 50 per cent. and the bronchial glands in 96 per cent. The specific tests, such as Von Pirquet's, give a negative result in the newly born, and show steadily increasing positive results until at 14 years of age 94 per cent. of school children give a positive result. Hamburger and Monti, working with school children in Vienna with Von Pirquet's test (which is the application of a 25 per cent. solution of old tuberculin to the skin which has been scarified), got a positive result in 94 per cent. of children of 14 years of age, and Calmette's results with the conjunctival reaction were almost identical. The basis of all these tests is a hypersusceptibility. In all subjects with tuberculosis a substance is present in the body which is able to set free, out of the tuberculin applied or injected, poisons which produce the tuberculin reaction. Owing to the ubiquity of the tubercle bacillus it is probably true that 94 per cent. of children aged 14 are tuberculised, but the majority of them are not affected by it. These tests give no information as to the character of the tuberculosis, its activity or the reverse. A positive reaction only indicates that the body somewhere and at some time has been infected by the tubercle bacillus. It has been shown that infancy is a period of extreme susceptibility and one of very limited resisting powers, the type of tuberculosis found in infants being the acute miliary form, which is rapidly fatal, or extensive glandular tuberculosis. As the age progresses more children suffer from tuberculous lesions, the mortality being less owing presumably to protective mechanisms being formed in the body. After 4 or 6 years of age the lesions tend to resemble those of adults. In regard to the channels of infection the two of importance are those of inhalation and ingestion. There is much to be said for infection by both these ways, but I am convinced that infection by inhalation is the most frequent method. Closely allied to this is the question as to whether infection is caused by the bovine or the human bacillus. At present, until we have conclusive evidence, it is safest to assume that infection is possible by both these channels, and by both the human and bovine bacillus, and therefore to be guarded against. In 1913 in the Woolwich Tuberculosis Dispensary, out of 1090 children examined under 15 years of age 160 were found to show definite signs of pulmonary tuberculosis, and of these 78 per cent. had a definite possibility of infection in the home. Of the 1090 children examined 260 were regarded as suspects and kept under observation, 160, as I have already said, were definite. Included in this number were all stages of pulmonary tuberculosis, definite early pulmonary tuberculosis, the caseous and the fibro-caseous cases, and also the group of tuberculosis of the bronchial glands. Fifty-two children showed other forms of tuberculosis, glands, bone joints, or subcutaneous tuberculous abscesses; 618 children were non-tuberculous; 14·6 of the whole were definitely notifiable cases of pulmonary tuberculosis. This is a fairly high figure, but it is from a special *clientèle*, the children being mainly contacts of adult cases of pulmonary tuberculosis and cases of definite or suspected pulmonary tuberculosis sent through the school doctor, the Invalid Children's Aid Association, and all other agencies in the borough working for the welfare of children.

Before discussing the signs and symptoms of pulmonary tuberculosis in the different stages found in children I should like to quote Goodhart and Still's remarks on the differences to be found in the chests of normal children. "The breathing in children," we read, "is diaphragmatic, and it is difficult sometimes to detect the movement of the upper part of the thorax. Children breathe irregularly and also asymmetrically. It is quite a common thing to find a child breathing fully now with this side, now with that. I take this to be due not to muscular weakness, as some aver, but to the as yet imperfect education which is seen in all the muscles, whether of speech or of voluntary movement." This normal condition is not fully recognised, and is the cause of many children being placed under the suspect group, or even among the definite cases. In many cases of suspected pulmonary tuberculosis I have found that different examiners find the physical signs of poor expansion, impaired note, and weakened breath sounds on different sides—a fact which always helps one to make a negative diagnosis. With regard to the percussion of the chest in children, Dr. Still says: "It is not difficult to obtain a dull note which is *not* due to the lung underneath. A very little difference in the level of the two shoulders will effect this, and the irregularity of respiration so noticeable in children will do the same. Therefore in cases where the differences are slight it is always as well to be cautious in our opinion and probably to wait until a second examination has confirmed it." The auscultatory sounds in children also differ. It is usual to describe the respiration of children as puerile, *i. e.*, "the inspiratory murmur is harsh and the expiratory slightly prolonged, but the most frequent difficulty is to know whether you are dealing with bronchial breathing which is the result of disease, or with that which is due only to a temporary accelerated respiration. In young children it is not unusual to find the expiratory murmur in the upper two thirds of the back of a bronchial nature, longer than it should be, and higher pitched than it should be, and the question of the meaning of this can only be settled by close examination of both sides, and appeal to one's experience." Here again if the breathing is of exactly the same quality on both sides doubt your diagnosis, should you have decided there is disease. It is fatal to *ask* young children to breathe; instantly they make a conscious effort they seem to forget how to breathe, and the efforts made are not the normal breath sounds.

In the suspect group at Woolwich we placed all children who showed any physical signs in the chest on repeated examination, such as poor expansion at one or other apex, or of one lung generally, with impaired resonance over the same area and weakened air entry. The air passages in all these children were examined, and any obstruction in nose or throat treated. As many as possible were given a course of breathing exercises, and the results were very satisfactory. With the better control of the muscles of respiration resulting from the exercises and the improved expansion many lost all the physical signs and were considered non-tuberculous. In this group also were placed children who showed the stigmata of tuberculosis, and who were living in homes in which there was an adult case of "open" tuberculosis. This group we considered the most important. The children were examined at one, two or three monthly intervals, this observation being kept up as long as the infection remained in the home. As many as possible of the latter were recommended for the playground classes at school or for the open-air school. The homes of all the suspect cases were visited by the nurses attached to the dispensary. In this way the hygiene of the home was, if necessary, corrected, and an occasional case of "open" pulmonary tuberculosis discovered.

The next group of the *incipient or early definite pulmonary tuberculosis* is the most difficult, and it is impossible to make a diagnosis on a single examination. These cases may have no more physical signs than the suspect group, but there is evidence of some toxæmia. The child is pale and ailing, there is loss of weight, there may or may not be a short cough and sweating at night. On a careful temperature record being taken, this shows a variation more than the normal. There is an irregular rise in the temperature. The rectal temperature gives the most accurate results. Exercise records sometimes give assistance, the temperature after exercise showing in the tuberculous subject a greater variation than the normal. The physical signs in the chest, especially those of auscultation, where the inspiration is found to be granular (or "sticky," I think, describes it better), and the temperature record, give most assistance in coming to a positive diagnosis. The hearing over the suspected area of a fine crepitation which does not disappear on coughing, but which remains the same or increases, is a very important sign on which I personally lay great weight. But when this is found the case is perhaps beyond the stage of incipient pulmonary tuberculosis. A positive Von Pirquet or Calmette reaction adds weight, but does not help us to make a positive diagnosis. A focal reaction following an injection of tuberculin would show that the case was definitely tuberculous, but it is doubtful whether this method is justifiable in children. The presence of the tubercle bacillus gives us proof positive, but in these early cases there may be little or no sputum, and if there is sputum the child rarely expectorates it; it is coughed up into the pharynx and then swallowed. Dr. Holt, of New York, recommends that in all suspected or early cases where there is a cough one should attempt to get sputum for examination from the back of the throat. He suggests that a cough should be excited by irritating the back of the pharynx and the sputum caught on a piece of muslin or gauze. In the babies' hospital in New York in nineteen months seventy-seven cases of pulmonary tuberculosis were admitted. Sixty-two of the patients were infants under 2 and fifteen under 6 months of age. Bacilli were found in the sputum in 80 per cent. of the cases using this method. Nearly all these cases, however, were cases of tuberculous bronchitis with much secretion. A child aged 4 years was brought to see me at the Woolwich Tuberculosis Dispensary suffering from whooping-cough. I examined the child and found she had extensive broncho-pneumonia. In examining the throat I removed a small piece of sputum from the back of the pharynx and had it examined. It was found to be packed with tubercle bacilli, which showed me the value of the method, and also in this case partly altered the diagnosis. These definite cases require very careful treatment. The improved hygiene of the home and the open-air school is not enough. The regulated rest and exercise which are so essential in bringing about a permanent cure can only be got at a sanatorium, and the residential sanatorium school for a prolonged period gives the best treatment for these cases.

The caseous and the fibro-caseous cases found in children show signs and symptoms very similar to those found in adults, and the diagnosis is generally easy, but there are certain differences. The lesions are less often apical, and are frequently more extensive at the root of the lung or at the base. The older the child the greater the tendency to the fibro-caseous type. As the resistance and the age increase the disease becomes more of a chronic form. In infants where the resistance is *nil* the type found is the acute miliary. The caseous type is a stage between this and the more chronic fibro-caseous form. Another point of difference that I have noticed is that the toxæmia is often very much less than would be expected from the area of lung affected, and in the fibro-caseous type fibrosis and contraction of the lung may take place to a large extent without causing the symptoms found in adults or much inconvenience to the child. Hæmoptysis in the caseous type is not so frequent as in adults and is generally small in amount, and when it does occur it does not render the child so ill. At Woolwich we had one small boy who had quite a large hæmorrhage for a child (about 5 oz.) at 10 a.m., and who spent the same evening bathing in the Thames with no evil results to himself. The mental factor and the fear of a recurrence so noticeable in adults is absent in children. Chronic bronchitis, bronchiectasis, and areas of unresolved pneumonia have to be eliminated before coming to a positive diagnosis, although all of these may take on a tuberculous character. The prognosis in both these forms is unsatisfactory. In the fibro-caseous form the condition may become very chronic, but sooner or later the disease lights up again, each exacerbation extending the disease area. As regards treatment, these are the cases that seem to require more than the hygienic and sanatorium *régime*. Treatment with tuberculin in some cases answers well.

Tuberculosis of the bronchial glands and hilus tuberculosis form a fairly large group, and give on the whole fairly definite signs and symptoms. Hilus tuberculosis includes, as well as tuberculosis of the bronchial glands, definite pulmonary tuberculosis at the hilus or root of the lung. The hilus, not the apex of the lung, is considered by many to be the primary focus of disease, especially in children, and possibly also in adults in all forms of pulmonary tuberculosis, the infection being the result of direct contact with the tuberculous bronchial glands. X-ray examination of the chest has done much to bring about this point of view. The bronchial glands appear to be involved early in the tuberculous process and to be very susceptible to the tubercle bacillus. As to how the infection reaches the glands is still a moot point. There are again the two schools, the one which considers that the infection passes from the air-passages or air-cells in the lung through the peri-bronchial lymphatics to the glands; the other which bases its results on the work of Calmette, who proved experimentally that young bovine animals after feeding on a diet containing tuberculous material showed the earliest lesions in the bronchial glands—that is to say, that the alimentary canal may be a direct path of infection. We know that these glands, however infected, show a marked tendency to spontaneous cure, but they occasionally break down and give rise to a general infection, or they may rupture into a bronchus and set up an acute infection of the lung. The symptoms in these cases are sometimes fairly definite, sometimes the reverse. There is generally an indefinite and progressive condition of ill-health in a child who has been previously healthy, associated with much anæmia and lassitude. The child may appear quite well nourished but very flabby; a troublesome cough may be present, which is often in paroxysms; and also poor appetite, night sweats and a slight fever. Physical signs are only found if there is actual pressure on a bronchus preventing full inflation of the lung. Of two well-marked cases under my care the first was a small child of 15 months who was living in the same house with an acute "open" phthisis. The child was markedly pale and plump, but had very poor muscularity. He was the typical pre-tuberculous type. On examination I found definite dulness and absence of breath sounds all over the right lung. The left lung was absolutely clear, but had some exaggeration of the normal breath sounds. There were no adventitious sounds in either lung and no fluid. The X-ray examination was reported to show definite enlargement of the bronchial glands on the right side and some thickening of the bronchi in the region adjacent. The child was placed under the best conditions possible in the home, the diet improved, and cod-liver oil and malt given at the dispensary. The child was examined every seven or fourteen days; the breath sounds returned very gradually, but did not equal the breathing on the left side of the chest; the resonance returned, and the general improvement in the child was very marked. The other case was a child of 6 years, whose main trouble was an irritating cough and very marked anæmia for a prolonged period. In his case the dulness was only noted in the right interscapular region with weak breath sounds over the right lower lobe. In this case the X rays showed definite enlargement of the glands. These cases were well marked. There are many where the signs are very few, but an impairment of note in the interscapular region with weakened breath sounds is very suggestive, combined with the stigmata of tuberculosis. In all my cases the glands affected were on the right side. All cases of bronchial glands showing definite physical signs should be notified and receive treatment at a resident tuberculous school.

I should like to repeat that I consider the tendency of the moment is to label far too many children definitely tuberculous, and it is not to the advantage of the child. It is still too early to explain to the general public that a child is not ill, although it is tuberculous. Observation is very necessary for all suspected cases, and could be carried out through the tuberculous dispensaries and the school. The definite early cases want to be taken in hand much more rapidly, since delay in these cases affects the chance of permanent cure, and the treatment should be prolonged.

Until we have much more definite ideas of what constitutes notifiable pulmonary tuberculosis or what does not, much indiscriminate notification will go on, and before we can arrive at that stage it will be necessary to revise and standardise the teaching and the nomenclature at the different medical schools.

Until this is done it is impossible to compare the results of different observers or to arrive at a real knowledge of the extent of tuberculosis in children.

SYPHILIS MENINGO-VASCULARIS, CONGENITAL SYPHILIS, CHOROIDITIS, OPTIC ATROPHY, HERPES ZOSTER, MULTIPLE ROOT LESIONS.*

By Leonard Guthrie, M.D., F.R.C.P.,
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Assistant Physician to the Hospital for Epilepsy and Paralysis, Maida Vale.

F. T—, born January, 1903.

Family history.—The patient's parents were both quite healthy until their marriage in 1894. Early in 1895 a healthy girl was born, who still survives. Shortly after the birth of this child the mother suffered from a chancre on the vulva and anæmia, but neither from rashes nor sore throats. Her second pregnancy ended with the birth of a seven months peeling child. At her third pregnancy twins were born at term, but both died before they reached the age of 4 months. Her fifth child was a boy who died of " cause unknown " at the age of 9 months. The patient was the sixth child of this marriage. His birth was followed by the birth of a premature child, of a girl now aged 9, of three miscarriages, and a girl now aged 5.

Personal history.—At birth the patient was a small child; as a baby he suffered from wasting. He walked and talked at the usual time, and as a baby only suffered from children's complaints. By the age of 11 he had reached Standard IV. About May, 1914, he "began to go wrong." He complained of sick headaches, general weakness, pains in his body and limbs, fainting fits, retching, and became "irritable, jumpy, and restless of nights." In June, 1914, he first attended the Western Ophthalmic Hospital under the care of Mr. E. Kenneth Campbell, and was there found to have choroidoretinitis. He was treated with iodides, but in spite of treatment vision gradually got more and more dim and his general condition became progressively worse. In January, 1915, he developed herpes zoster around the inner side of the right knee.

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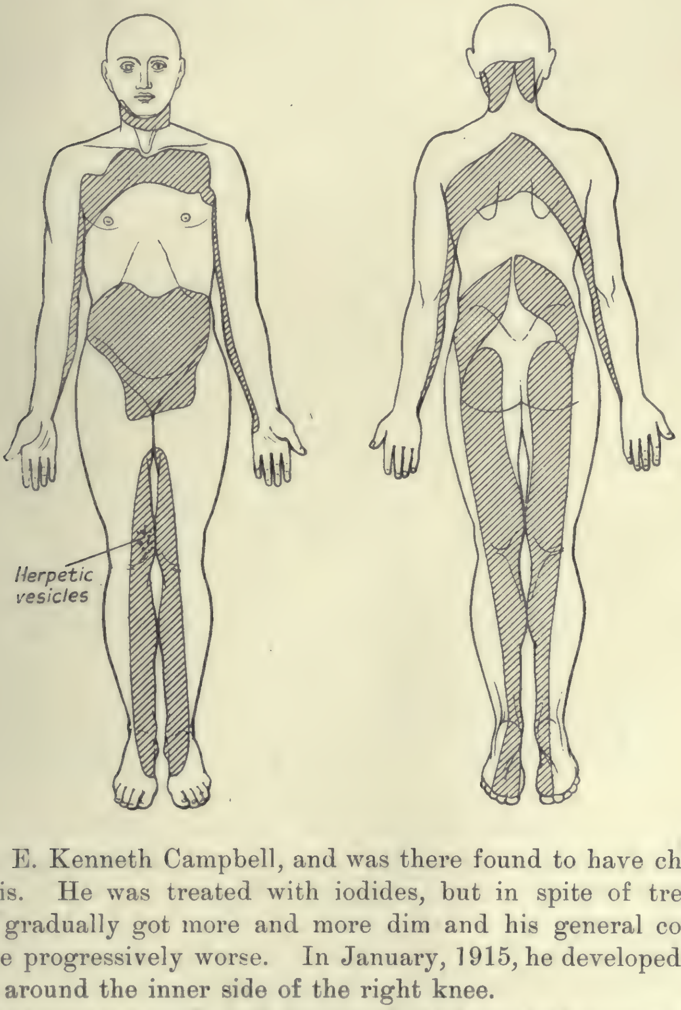
* The case was shown to the Neurological Section of the Royal Society of Medicine on February the 25th, 1915.



The patient is a small, well-developed child, aged 12 years, weighing 4 st. 12½ lb. He shows few stigmata of congenital syphilis. The head measures 19¾ in. in circumference, 14½ in. from nasion to inion, and the bimeatal circumference is 13½ in. The bridge of the nose is well developed and there are no scars around the angles of the mouth.

The teeth are not characteristic; the arch of the palate is high and narrow. He is blind, and with his right eye cannot even recognise the difference between light and darkness; with his left eye he is unable to count fingers. The optic discs on each side are in a condition of white atrophy. There is much excess of pigment around the margins of the left disc and evidence of old choroidal changes in both fundi. Smell and taste are unaffected, and hearing on both sides is good. He recognises the ticking of a watch at a distance of 12 in. with either ear. The corneæ show no evidence of old interstitial keratitis. The pupils are unequal in size, the right being the larger; neither reacts either to the strongest light or on attempted convergence. There is no actual ocular paralysis, but the visual axes are rarely parallel. Ptosis and nystagmus are absent. The movements of the jaws, face, palate, larynx, and tongue are completely unaffected. The tongue can be protruded straight and held steadily. Gait is normal. Romberg's sign is not obtained. Co-ordination of the hands is little impaired, and the alignment of the fingers is fair. There is no local muscular wasting, and the tone of the muscles of the extremities is unaffected. He has complained in the past of shooting and aching pains in the body, neck and extremities, but in recent times these have not been so troublesome. To sensory testing no gross loss of sensibility to stimulation with the pricks of a pin, the light touches of cotton-wool, pressure, passive movement, the vibrations of a fork, heat, cold, localisation, shape, size, form, weight and consistency, can be demonstrated. Over certain areas marked in the diagram he says that all painful stimuli seem "sharper," "hurt more," and are "funny." These areas seem to correspond with definite root-areas. The over-reaction is most intense on the inner side of the knees, and is greater on the right leg than on the left. The knee-jerks cannot be obtained even on reinforcement, and the ankle-jerks are abolished. Both plantar reflexes give a flexor response. The abdominal reflexes on both sides are extremely brisk. The wrist- and elbow-jerks are normal, and a jaw-jerk is obtained. The action of the sphincters is controlled. On the inner side of the right knee, at the level of the insertion of the tendon of the adductor magnus, is a patch of herpetic vesicles (1 in. by 1¼ in.), otherwise there are no vasomotor or trophic changes. He suffers from time to time from attacks of generalised headache, referred chiefly to the frontal region. The headache leads to a feeling of nausea, but rarely to actual vomiting. He has never suffered from fits or other forms of seizure. Speech is normal. Memory is fair and attention good. He sleeps well, but some weeks ago suffered from nightmares and bad dreams. Hallucinations and delusions are not present. There are no abnormal signs in the heart, vessels, lungs, abdomen, testes, or urine. The Wassermann reaction both in the blood and in the cerebro-spinal fluid is positive, and the cells in the cerebro-spinal fluid number 25 per c.mm.

Until recently this case would undoubtedly have been diagnosed as one of juvenile tabes dorsalis and no anti-syphilitic treatment administered, but the sensory changes are those characterising a meningitic affection of the nerve-roots, and no evidence of any disturbance in the posterior columns is forthcoming. The appearance of a herpes zoster of the fourth lumbar area on the right side, whilst the patient has been under observation, confirms the diagnosis of the extra-medullary site of the principal lesions. Under treatment with intravenous injections of salvarsan or neo-salvarsan this patient should improve considerably. Another noteworthy feature in this case is the distribution of the root-lesions. In the nervous manifestations occurring after infection with acquired syphilis Head and one of us* have shown that the nerve-roots most commonly affected are those cervical roots which are related to the pharynx and tonsil (cervical, 2 and 3), those thoracic roots related to the aorta (thoracic, 2, 3 and 4), those thoracic roots related to the main mass of the abdominal viscera (thoracic, 9, 10, 11 and 12), and the sacral and lower lumbar roots. Here in a case of congenital syphilis the same roots are affected. Such findings add weight to the hypothesis that the spirochæte travels up to the central nervous system by way of the lymphatics which accompany the nerves.

Postscript.—In February, 1915, he received three injections of 0·6 grm. of neosalvarsan, and at the present time (June the 1st) his general condition is much improved; he no longer suffers from pains or bad dreams, but sight and the physical signs of nervous disease have altered but little.

A FORM OF SELF-MUTILATION OF THE PENIS IN YOUNG BOYS.†

By Thomas H. Kellock, M.C., F.R.C.S.,
Surgeon to the Middlesex Hospital and to the Hospital for Sick Children, Great Ormond Street.

Some years ago, when I was in residence at the Hospital for Sick Children, Great Ormond Street, there were in the wards two cases of mutilation of the penis. In the one, a boy of 8 or 9 years of age had passed a metal ring over the glans, which had remained in position for a considerable time and had caused so much swelling that it was only discovered after incisions had been made. The ring had ulcerated through the floor of the urethra, and I well remember the great trouble that was entailed in closing the fistula. In the other case, in a boy of about 3, a piece of cotton was found twisted tightly round the centre of the glans, and had also cut the urethra partially across. The child asserted that his mother had put it there because he wetted the bed. Needless to say she stoutly denied this, and I think her version that the child had done it himself was probably the correct one.

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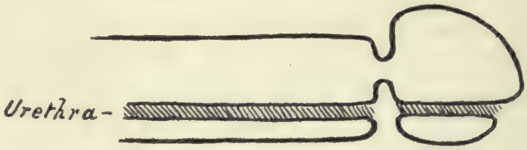
* Head and Fearnsides, 'Brain,' 1914, xxxvii, p. 137.

† A paper read at the Clinical Section of the Royal Society of Medicine, on May the 14th, 1915.

Within the last few years I have had under my care three cases of a somewhat similar character, resembling each other so closely that it would appear to be rather a common occurrence. Speaking, however, to surgical friends on the subject I find scarcely anyone seems to have met with such cases, and so I suppose they are more rare than I had thought.



Diagrammatic longitudinal section of penis.

Of the three cases two were private ones and one in Great Ormond Street Hospital. In all of them a hair twisted round the penis just behind the glans was the cause of the trouble. The last case I saw was so typical that a description of it covers the others. The patient was a boy, 5 years of age. When 3 years old he had been circumcised for some difficulty in micturition. Soon after the operation there was some ulceration behind the glans, but the cause or nature of this was not very clear from the history. Eighteen months before I saw him there was evidently something wrong which led the mother to examine the penis, and she found a piece of hair "hanging round it," as she expressed it. The free part of this, about 4 in. in length, she cut off. This did not bring about any improvement, and a few weeks before I saw him he was found to be passing all the urine from an opening on the under surface of the penis.

When I saw the boy in January of this year the glans penis was considerably enlarged, very hard and somewhat dusky in appearance.

It was almost completely separated from the rest of the organ, the isthmus connecting them being only $\frac{1}{8}$ in. across, and the urethra was completely divided. Epithelium had grown over both faces of the sulcus and across the isthmus, so that there was no raw surface.

Under an anæsthetic the use of a crochet needle at once detected a human hair tightly twisted three times round the isthmus.

The history and condition in the other two cases was practically exactly the same, except that no hair had been seen or removed. The children had both been circumcised, and there was a long history of ulceration and swelling followed by the formation of a fistula, and in both of them the urethra was found completely divided. In two of the three cases the children had long hair, and I thought what I removed was one of their own; but in the case I have described the hair that was removed was dark, whereas the child was fair, the mother's explanation of this being that the boy slept in the same room as a lady-help who had dark hair, and he might have obtained one of hers.

The condition in all these cases had been of long standing, and from want of recognition of the cause had been allowed to go on until complete division of the urethra had resulted.

My impression is that it is brought about by the children themselves; that they twist the hair round behind the glans which has been exposed by the circumcision and subsequent erections cause it to cut in; but it is difficult to explain why this process should continue until it has divided the urethra.

The father of one of the children, writing to me some time later, says: "Very curiously the doctor who treated him when he left the Home had an exactly similar case recently; but owing to the experience he gained with our boy he was able to locate the trouble, and found six strands of hair which had cut through to the urethra, but had not actually cut it."

As to treatment, prevention is, of course, the best. This is one of the troubles that may follow a complete circumcision with permanent exposure of the glans, and so is an argument in favour of a modified operation where some prepuce is left. Failing prevention, an early recognition of the cause and its removal would prevent serious consequences. When the latter, in the shape of a deep sulcus, a narrow isthmus, and division more or less complete of the urethra have occurred, a plastic operation must be performed, and this is a matter of considerable difficulty.

I am glad to say that in two of the cases I have been able to promote adhesion between the divided surfaces and re-establish the urethra. In the other case the attempt to do so was followed by gangrene of the glans, and so the child is left in the unfortunate condition of having a penis without a glans and the possibility of trouble with stricture at the opening of the urethra, which fortunately up to the present has not occurred.

Royal Society of Medicine.

CLINICAL SECTION.

Friday, May the 14th, 1915.

A Case of Double Osteotomy of Tibiæ ten years after Operation. —Mr. Thomas H. Kellock.—The patient was a boy, now aged 13 years. When three years of age he had badly deformed tibiæ which were much bowed outwards and forwards, and there was a separation of the internal condyles of the femora, where the malleoli were touching, of three inches. Open osteotomy of the tibiæ was performed, the fibulæ fractured, and the legs put up in plaster of Paris splints. The legs were now quite straight, and in the skiagram there was practically no indication of where the osteotomies had been done, the line of the bone being normal. The boy was now in hospital for abdominal trouble, probably tuberculous peritonitis.

A Form of Self-mutilation of the Penis in Young Boys.—Mr. Thomas H. Kellock. (*Vide* p. 209.)

Abstracts from Current Literature.

Medicine.

The significance of prenatal eruption of teeth (*'Riv di Clin. Pediat.,'* 1914, xii, *p.* 241).—**A. Beretta** states that in precocious dentition, generally affecting the lower incisors, but sometimes other groups of teeth, it is necessary to distinguish for greater exactitude a *dentitio præcox* found in infants of 4, 3, or even 2 months, a *dentitio præcocior seu natalis* which appears during the first few days after birth, and a *dentitio præcocissima seu prenatalis* met with in infants born with teeth already erupted. Teeth prematurely erupted must be further differentiated according to the stage of development which they present, whether late or early, in relation to the normal in analogous periods of the life of the child. These teeth must be examined in their histological and parasitical aspects to ascertain if the different dental and peridental tissues present a normal or pathological structure, such as pulpitis, pericoronitis, folliculitis, or alveolitis. Teeth already erupted at the time of birth have generally a disposition to fall out, either from deficiency in the development of their roots or from inflammation. Such teeth usually call for extraction, not for the commonly supposed reason that their presence interferes with normal suckling, from pain caused, or from traumatic lesions conducing to infective processes, but because the infant cannot exercise the requisite suction owing to the deficiency of adaptation which leads to paradental ulceration. Precocious dentition and dentition at birth have not the same significance as prelacteal dentition. Precocious dentition, which is often familial and hereditary, is almost always the expression of peculiar somatic conditions connected with individual constitution, certain diseases, and with general or local changes in the organism. Eruption of teeth at the time of birth occurs in about one in 5000 births and hence is a somewhat rare occurrence, contrary to the opinion of some observers. In a unique case occurring in the author's practice there was fœtal or antenatal eruption of the two lower central incisors in an infant born prematurely. Pathological examination showed clearly a hæmorrhagic process in the sub-odontoblastic zone with marked lesions of the vascular endothelium. There was no trace of leucocyte infiltration. The author thinks it irrational to attribute precocious eruption to a single general cause. Each case must be investigated with regard to somatic type, individual constitution, diseases, and other general and local changes. From the investigation of recorded cases and the scanty pathological and histological details given in them and from those recorded by the author it seems justifiable to suppose that whatever be the mechanism of the eruption the stimulus to precocious eruption, in some cases at all events, consists in an alteration of the dental and peridental tissue, either primary or secondary to some toxic infection of the organism.

VINCENT DICKINSON.

Congenital transposition of the stomach to the left side of the chest ('*Practitioner*,' 1914, XCIII, *p.* 720).—**L. E. Graves** made a post-mortem examination on a female infant, aged 18 months, and found in addition to the congenital displacement of the stomach that the duodenum and part of the jejunum lay on the superior surface of the diaphragm.

F. R. B. ATKINSON.

Gastric digestion in infants ('*Am. Journ. Dis. Child.*,' 1914, VII, *p.* 305).—**M. Hahn** has studied the acidity and ferment activity of the gastric juice in normal infants. For measuring the strength of HCl he regards all titration methods as inaccurate, and relies upon a method giving the hydrogen-ion concentration. This consists in noting the colour changes produced by adding various indicators to the solution of gastric contents without titration and comparing them with a table constructed from solutions whose acidity has been determined electrometrically. The indicators used are methyl-orange, paranitrophenol, and lacmus. He finds that the hydrogen-ion concentration $(H) = 1{\cdot}0 \times 10^{-5}$ is the normal at the height of digestion for infants fed on one third cream-milk and two thirds milk. This is the optimum reaction for rennin and gastric lipase; pepsin is inert at this reaction. Peptic digestion of casein is, therefore, unimportant for the infant.

REGINALD MILLER.

The effect of sugars in the gastric secretions in infants ('*New York State Journ. Med.*,' 1914, XIV, *p.* 499).—**Sherman** and **Lohnes** record their experiences of the effect of milk sugar, cane sugar, and malt sugar on the gastric secretions of infants. The sugars were all in a 6 per cent. solution in a similar barley water mixture. The authors found that cane sugar was only slightly more stimulating to the stomach than milk sugar. Malt sugar in the form of dextri-maltose was at least twice as stimulating to the gastric secretion as either milk or cane sugar. J. Allan.

The pylorus, pylorospasm, and allied spasms in infants (*'Am. Journ. Dis. Child.,'* 1914, VII, *p.* 184).—**A. Hess** has studied a number of cases of infants in whom an obstruction was found to the passage of a duodenal catheter, but in each of whom the obstruction could be overcome and the pylorus ultimately traversed. He finds that the diameter of the pylorus is about 4·75 mm. in newborn infants, and 6 mm. at three months of age. He was able to demonstrate pharyngospasm, cardiospasm, pylorospasm, and pyloric insufficiency in newborn children. He concludes that there is a distinct individuality in the tonicity of the pylorus. He regards visible gastric peristalsis with "persistalic pseudo-tumour" as not necessarily implying organic pyloric obstruction, nor even pylorospasm. On the other hand, a palpable pyloric tumour was never found in any case in which the catheter could be made to pass through the pylorus, nor did the presence of the catheter in the pylorus render it palpable. In some cases of pylorospasm gastric hypersecretion was present, but this is not the cause of marked cases which will not admit the passage of a duodenal catheter. Pylorospasm was rarely found in an isolated spastic symptom, being usually associated with one or more of the following: Pharygospasm, cardiospasm, laryngospasm, or anospasm. Reginald Miller.

Pyloric stenosis in infancy (*'Arch. of Ped.,'* 1914, XXXI, *p.* 809).—**Mark Reuben** regards pyloric stenosis of infants as due to two groups of cases—the spasmodic and the congenital hypertrophic. In the latter group symptoms may be produced by superadded spasm, the degree of organic stenosis being variable in different cases. He holds that no case should be operated upon if a duodenal catheter can be passed through the pylorus.
Reginald Miller.

Pyloric obstruction in infants (*'Lancet,'* 1914, II, *p.* 987).—**C. H. Miller** gives notes of ten cases, three of which terminated fatally. The chief points in treatment are: Keep the patient warm; wash out the stomach. Predigested milk will be for a long time the sole diet. The author prefers liquor pancreaticus for the purpose of digesting milk. The milk should at first be given a teaspoonful at a time every half hour. When this amount is tolerated the interval and quantity may be increased. When the patient is beginning to thrive he has found virol and albulactin useful as additional foods. Drugs are occasionally useful. When there is much colicky writhing and abdominal tenderness he gives tinct. opii ♏¼, or chlorodine ♏j, three times a day for three days. He has tried belladonna, but found it useless in this disease. The bowels have to be kept open. An occasional dose of castor oil, followed by grey powder, will often be sufficient. Petroleum emulsion is also useful. Phenolphthalein is, perhaps, the most satisfactory drug to use regularly. Regarding the question of whether such cases should be treated by the physician or the surgeon he summarises his views as follows: (1) Some cases can be treated by the physician. (2) Some cases would be better treated by the surgeon; but whether they are or not, medical treatment will be necessary. (3) Whether the treatment is medical or surgical, neither will be effective without the care of a specially skilled nurse. J. Allan.

One hundred and forty-one cases of recurrent vomiting in private practice (*'Am. Journ. Dis. Child.,'* 1914, VIII, *p.* 292).—**C. G. Kerley** describes this condition in seventy boys and seventy-one girls. More than half had been difficult feeders in infancy. The occurrence of acetone in the urine was noted with but few exceptions. The onset occurred at six months of age in the youngest, and at eight years in the oldest. The interval between the attacks varied from two to six months, the average being eight weeks. The attacks lasted from a few hours to thirteen days, the average being three and a half days. The temperature during the attacks varied from 105° F. to 100° F. Forty-one per cent. of the children affected were subject to repeated attacks of recurrent bronchitis, which occurred in some instances contemporaneously with the vomiting. The following modifications in diet are recommended. Substitution of fish and poultry for red meats, which are to be taken sparingly and on only three days in the week. The complete omission from the diet of milk, cream, and sugar is recommended. Saccharine is substituted for the last named; 5 gr. of sodium salicylate and 10 gr. of sodium bicarbonate are given thrice daily, with massage and physical exercises for months, and, if necessary, years. In the acute stages 5 gr. of sodium bicarbonate to 8 oz. of water are given freely with colonic irrigation with sodium bicarbonate (2 drm. to 8 oz.). The author concludes that this condition is frequent in the children of gouty parentage, less frequently met with at puberty, and is intensified in winter.

CHRISTOPHER ROLLESTON.

Beta-oxybutyric acid determinations in recurrent vomiting (*'Boston Med. and Surg. Journ.,'* 1915, CLXXII, *p.* 164).—**W. S. Parker** examining by means of bismuth meals and enemata a child subject to attacks of recurrent vomiting, concluded that there was some degree of obstruction in the neighbourhood of the cæcum, and that the attacks of vomiting were associated with this. While under observation a periodic attack developed, which ceased as soon as the bowel was thoroughly cleared by enemata. During the attack, lasting seven days, the urine contained from 0·9 to 1·7 per cent. of beta-oxybutyric acid, representing a daily output of from 5 to 10·5 grm. Later, a laparotomy showed some dilatation of the stomach and a considerable degree of dilatation of the cæcum. The organ was unfolded and the appendix was removed. No attacks of vomiting occurred for the next ten months, but then recurred, although much less severe in type. The author suggests that more cases of cyclical vomiting should be subjected to skiagraphic examination of the alimentary tract.

REGINALD MILLER.

Persistent vomiting associated with rumination (*'Am. Journ. Dis. Child.,'* 1914, VIII, *p.* 310).—**F. H. Bartlett** describes the case of a 5½ months infant, which was at first breast-fed for four weeks and then brought up by bottle unsuccessfully. Various foods were tried, but vomiting occurred after every meal, and the weight, which was 8¾ lb. at birth, fell after five months to 8lb. It was noticed that after each meal the baby began a suction motion of the tongue, which was pushed out between the lips and then withdrawn. With each projection of the tongue milk came into the mouth. A more solid food was prescribed, consisting of at first barley flour four tablespoonfuls and milk one quart, increased to six table-spoonfuls of barley later. The object of this alteration in the dietary was to provide a food of too great a consistency to be pumped out of the stomach. In three weeks the infant gained 4 lb., and at ten months weighed 19 lb. 14 oz. Craniotabes and a prominent abdomen were present. The author concludes that young babies can tolerate larger quantities of starch than have hitherto been given. CHRISTOPHER ROLLESTON.

Duodenal ulcers in infancy (*'Am. Journ. Med. Sci.,'* 1914, CXLVIII, *p.* 702).—**B. S. Veeder** states that of five cases four were diagnosed clinically, and in three instances the diagnosis was confirmed by autopsy. All the cases were marasmic and were under six months old. In only one case were there pronounced dietetic errors. Three began on breast-milk. Vomiting was present in all five cases. Hæmorrhage from the bowels was present in four. Massive hæmorrhage from the bowel, in the absence of polypi or ulceration of the large intestine, when associated with vomiting, is highly suggestive of duodenal ulcer. Severe collapse occurs in many cases at the time of the hæmorrhage. It is important to test the fæces of wasting and vomiting children for occult blood. The prognosis is unfavourable. Surgical interference is not advisable owing to the severe intestinal disturbance. The ulcers may be either single or multiple, and are either superficial or deep, involving all the layers of the intestinal wall. They are placed between the pylorus and the ampulla of Vater, and are nearly always on the posterior wall. They may be chronic and eventually heal. They occur in early infancy; very few are found after the age of five to six months.

CHRISTOPHER ROLLESTON.

Duodenal catheterisation and feeding in infants (*'Interstate Med. Journ,'* 1914, XXI, *p.* 953).—**A. F. Hess** has used the duodenal catheter with success in cases of pyloric obstruction in infants. A long Nélaton catheter, graduated to 40 cm., is employed, and this, with a little practice, can easily be passed through the pyloric sphincter into the duodenum, especially if some water has been introduced into the stomach. By this means the spasm either at the cardiac or at the pyloric orifice can be estimated, and the presence of a muscular hypertrophy be determined. If a No. 15 can be inserted into the duodenum, the probability is that the obstruction is merely spasmodic and not organic, though the converse is not necessarily true. In cases of persistent vomiting, whether due to pyloric obstruction or occurring as a complication of an acute infectious disease, duodenal feeding is often of the greatest value. Food should be given warmed, and must be introduced slowly and in not too large a quantity at a time. In many cases of pyloro-spasm death results, not from inanition, as would be supposed, but from alimentary intoxication brought about by giving excessive quantities of food. Duodenal feeding may be used exclusively or only occasionally, perhaps once or twice a day.

T. R. WHIPHAM.

Acute yellow atrophy of the liver in childhood (*'Riv. di Clin. Pediat.,'* 1914, XII, *p.* 653).—**C. Francioni** describes two cases, aged 7 years and 3 years. He finds only forty-six similar cases previously recorded. There seems to be two stages in the clinical picture, (1) in which the symptoms are not characteristic, and consist only of manifestations of a simple gastroenteric catarrh, for the most part followed by signs of obstructive jaundice not distinguishable from common catarrhal icterus. (2) After the illness has progressed in this way for a varying period of time without any special symptoms indicative of the grave turn the disease is going to take, a more or less rapid appearance of threatening symptoms supervenes. It is probable that the symptomatology of the second stage does not exactly coincide with the anatomical stage during which the destructive lesions in the liver are developing, it corresponds rather to that phase of this stage in which profound lesions are not only already produced, but have even reached such a degree of intensity and extent as to give rise to serious and irremediable deficiency of the hepatic function. It is, therefore, not possible to gauge the exact point at which the liver begins to become seriously affected, and this explains the futility of therapeutic measures on the course of the disease, since energetic treatment cannot be adopted before the lesion of the liver has become irremediable. VINCENT DICKINSON.

Subacute atrophy of the liver (*'Am. Journ. Dis. Child.,'* 1914, VIII, *p.* 357).—**E. C. Dickson.**—A male child, aged 2 weeks, developed severe jaundice, which persisted without intermission till its death at five months of age. The child developed normally, and was never acutely ill till twenty-four hours before death. At three weeks of age the liver and spleen were enlarged, but no other abnormalities were found. The stools were not acholic at any time, and Wassermann's reaction was negative. Death was preceded by severe respiratory distress and abdominal distension. The necropsy showed marked ascites, a small granular liver, a large indurated spleen, and large kidneys, with marked parenchymatous degeneration. There was extreme general icterus, but no demonstrable stenosis of bile-ducts. Microscopically there was complete necrosis of the liver, except a small zone round the margin, where there was evidence of regeneration of liver tissue. The spleen, kidney, pancreas, and thymus showed beginning fibrosis, but the blood-vessels in all the organs were apparently normal. There were marked parenchymatous and fatty degeneration, and also necrosis of the renal epithelium. J. D. ROLLESTON.

Cholesterol metabolism in a case of congenital hæmolytic jaundice with splenomegaly (*'Interstate Med. Journ.,'* 1915, XXII, *p.* 138). —**J. Rosenbloom** and **J. P. McKelvy** found that in a case of congenital hæmolytic jaundice there was a considerable loss of cholesterol in the fæces, and they think that the hæmolytic jaundice in these cases may possibly be "due to the fact that owing to some perversion of metabolism there is a lessened cholesterol content of the blood-serum and not enough cholesterol present to exert its antagonistic action to prevent hæmolysis which might occur, due to absorption of various substances from the intestines and other organs." Cholesterol has been found to inhibit the activity of certain hæmolytic agents, just as lecithin accelerates it. The increased excretion of cholesterol may also account for the attacks of abdominal pain suggestive of biliary colic that is present in the disease. These attacks may be due to the presence of gall-stones formed from the abnormal cholesterol metabolism, and it is noted that gall-stones have been found in a majority of cases in which the gall-bladder has been examined. T. R. WHIPHAM.

Epidemic icterus (*'Med Record,'* 1914, LXXXV, *p.* 710).—**A. Strauch** reports a personal experience of two families affected with a mild type of this complaint. In one, four children were affected within a period of two or three weeks: in the other, eight. The two families lived within two blocks of each other. The cases occurred in November and December. The author thinks that such cases as these cannot be attributed to a spreading of an ordinary gastro-duodenal catarrh, and is inclined to regard them as due to a specific infectious agent. REGINALD MILLER.

Intestinal putrefaction with convulsions (*'Boston. Med. and Surg. Journ.,'* 1914, CLXXI, *p.* 819).—**W. L. Thompson** describes the case of a boy, aged 6 years, who had been stated to have been suffering from epilepsy since the age of two years, and had been treated accordingly without success. The features of the case were as follows: (1) The great number of convulsions daily (fifty); their mild character; their brief duration (one to two minutes); their occurrence for three consecutive years. (2) Sound mental and physical health. (3) Rapid cure by phenolsulphate of zinc with cascara sagrada every four hours for five days, then ½ oz. of mag. sulph. on the sixth evening and morning, and 5 gr. of thymol with another ½ oz. of mag. sulph. the next morning; complete suspension of food and drink except a little water for thirty-six hours, and then the usual diet with a suspension of lactic-acid bacilli in pure culture. F. R. B. ATKINSON.

The care of the abdomen in infancy and childhood (*'New York State Journ. Med.,'* 1914, XIV, *p.* 566).—**E. M. Mosher** is of opinion that much ill-health results from want of care of the abdomen in early life, and strongly emphasises the value of preventing intestinal stasis. It is argued that enteroptosis, sectional or general, is the chief underlying cause of stasis in the gastro-intestinal canal, that weakness and distensibility of the abdominal wall, together with the vertical posture of the trunk, are prime factors in its causation; that infancy and childhood are periods of especial danger because of the still undeveloped condition of muscle fibre and other tissues, the flexibility of the spine, and the inevitable crowding of the abdominal viscera between diaphragm and pelvis in early attempts to maintain the sitting posture. Among the suggestions made for the prevention of enteroptosis in infants and children may be mentioned: Proper feeding, with especial reference to the time element and the quantity of food given; a longer continuance of the horizontal posture of the trunk than is common; a life in the open air—free from bumps and jolts; prevention of mental forcing and early precocity; development of the abdominal muscles by every means possible. J. ALLAN.

Surgery.

A case of large myeloid of mandible (*'Med. Journ. of Austral.,'* 1914, I, *p.* 106).—**R. Douglas.**—The tumour was removed from a boy, aged 14 years. Sufficient time had not yet elapsed to say whether recurrence would occur or not. F. R. B. ATKINSON.

Sarcoma of the tongue (*'Journ. Amer. Med. Assoc.,'* 1915, LXIV, *p.* 291). —**W. T. Coughlin** reports two cases of sarcoma of the tongue; one in a boy, aged 14 years, and the other in a man, aged 19 years. In both cases the growth was of a few months' duration, and there was a history of the patient having bitten his tongue some time previously. The growth in each case was a mixed-cell sarcoma. The writer gives a study of fifty-eight reported cases. T. R. WHIPHAM.

Congenital pyloric stenosis in an infant, aged 7 weeks, treated by gastro-enterostomy (*'Dub. Journ. Med. Sci.,'* 1914, II, *p.* 280).—

C. A. Ball was called to see an infant whose bowels had not moved for ten days. The infant from birth was said to be healthy. Oil and enemata had no effect, and it vomited when fed, and passed no urine. It was, therefore, considered that there was obstruction high up. On opening the abdomen the pylorus was found to be greatly enlarged, and this enlargement appeared to extend into the duodenum. The swelling was hard and smooth on the surface. Plastic operation was not possible, as the obstruction seemed to be complete and was very hard. The abdomen having been opened, and it being apparent that the child would die if nothing was done, it was decided to do a gastro-enterostomy. The child was very weak for two or three days, but in about twenty-four hours after the operation the bowels moved, and three weeks after it was quite strong and healthy. The author referred to a method of treatment which had been suggested in these cases, viz., washing out the stomach and giving the child enemata, but he considered that this little patient had gone too far for this treatment to be of any use.

J. Allan.

The pylorus after gastro-enterostomy for congenital pyloric stenosis ('*Journ. Amer. Med. Assoc.*,' 1915, lxiv, *p.* 410).—**D. Lewis** and **C. G. Grulee** report on the condition of the pylorus in a case of congenital pyloric stenosis 256 days after gastro-enterostomy had been performed. The patient was a male, aged 2 months, who was admitted with typical signs of pyloric stenosis. Three days later a posterior gastro-enterostomy was performed and at the operation the pylorus was found to be enlarged, white, and somewhat œdematous and hard. The child did well and four and a half months later went through an attack of pneumonia. A second attack of pneumonia occurred after another four months, and then the child succumbed. The stomach was found to be of normal size. The pylorus was of about the same size and consistency as at the operation. From the duodenal side the enlargement projected into the lumen of the bowel. When the stomach was opened the lumen admitted a fine probe and was surrounded by a rigid wall, which microscopically was composed of an enormous hypertrophy of the circular muscular coats and some hypertrophy of the longitudinal as well. The mucous membrane was thrown into folds and not contracted. The gastro-esterostomy was apparently functioning properly. The fact that the pylorus was unchanged is in favour of surgical treatment when once the diagnosis is established.

T. R. Whipham.

X-ray examination following operation for congenital pyloric tumour ('*Boston Med. and Surg. Journ.*,' 1915, clxxii, *p.* 166).—**C. L. Scudder** takes the extreme surgical view with regard to hypertrophic pyloric stenosis. Not only does he deny that pyloric spasm is the cause of the disease, but he will not allow that it plays any part in the production of the symptoms. Consequently, operation is necessary in every case. This view he supports by the results of skiagrams taken after a bismuth feed in cases which have been operated upon (posterior gastro-jejunostomy) from one to eight years previously. In all twenty-six cases the same result was noted, namely, that the bismuth passed through the stoma and none traversed the pylorus. Reginald Miller.

The danger of delay in the diagnosis and treatment of intussusception in infancy ('*Med. Record,*' 1915, lxxxvii, *p.* 218).—**E. W.**

Peterson reviews the literature, including Clubbe's paper (*vide* British Journal of Children's Diseases, 1909, vi, *p.* 311), which, he says, should be an inspiration to every pædiatric surgeon, and records nineteen personal cases in infants, aged from 6 days to 13 months. All were breast-fed and were healthy and well nourished with one exception. An abdominal tumour was felt in all. Every case seen within forty-eight hours of the onset was cured by laparotomy. The fatal cases had all been brought in later. In 13 Peterson performed manual reduction of the invagination with 9 recoveries and 4 deaths, and in 6 resection or enterostomy, with 1 recovery and 5 deaths. He concludes that early laparotomy with manual reduction of the invagination is the safest, simplest, and most successful method of treatment.

J. D. Rolleston.

Intussusception caused by an inverted Meckel's diverticulum (*'Journ. Amer. Med. Assoc.,'* 1915, lxiv, *p.* 1065).—**C. R. Hancock** reports the case of a boy, aged 2 years, who was operated upon for an intussusception. The invagination was 10 in. in length, and consisted of part of the ileum, cæcum, and part of the transverse colon. The intussusception was reduced and at its apex was found an inverted Meckel's diverticulum 2½ in. in length. This was pushed into its normal position, and was then excised. The patient made a good recovery.

T. R. Whipham.

Spasmodic ileus simulating intussusception (*'Journ. Amer. Med. Assoc.,'* 1914, lxiii, *p.* 1391).—**J. D. Butzner** reports the case of a breast-fed female infant, aged 8 months, who, two hours after a normal stool, suddenly became ill. The face was pale and sweating, the legs were drawn up, and screaming occurred at intervals. The abdomen was flat and relaxed except in the upper right quadrant, which was slightly rigid and tender. Here a cylindrical mass could be felt extending across the mid-line. An enema produced some blood-stained mucus, but no fæces or gas. A rectal examination was negative. A diagnosis of intussusception was made, and in the morning (twelve hours later) a laparotomy was performed. The upper part of the small intestine was distended, but the distension ceased suddenly and the lower part was absolutely empty and flat. The colon was normal, but contained a considerable quantity of blood. The condition was that of spasmodic ileus. The intestines were replaced, the abdomen was closed, and the lower bowel washed out with saline solution, and atropine and morphine were administered. The patient made a rapid recovery. The author thinks it possible that cases of reported spontaneous reduction in intussusception are really cases of spasmodic ileus, but that there is no safe way of differentiation between the two except by exploratory operation.

T. R. Whipham.

Cavernous and cystic lymphangioma of the cæcum (*'Journ. Amer. Med. Assoc.,'* 1915, lxiv, *p.* 719).—**E. A. Babler** reports the case of a boy, aged 15 years, who was operated upon for what was thought to be an acute infection of the appendix with abscess formation. A firm mass about the size of a man's fist was found situated to the outer side of and intimately connected with the cæcum. The appendix was free and did not show evidence of inflammation, and the mesenteric glands were not enlarged. The diagnosis of probable carcinoma of the cæcum was made, and the cæcum, with the entire ascending colon and about 8 in. of the ileum, were excised, and a side-to-side anastomosis by means of a Murphy's button was performed. The patient made a good recovery. Histologically the tumour proved to be a cystic cavernous lymphangioma. T. R. Whipham.

Congenital inguinal implantation of the vermiform appendix (*'Journ. Amer. Med. Assoc.,'* 1915, lxiv, *p.* 819).—**H. W. Wade** reports the case of a coloured male infant, aged 6 months, who died from pneumonia. At the necropsy the appendix was found to extend downwards for a distance of 6 cm. to the internal abdominal ring, being covered throughout by a fold of the peritoneum, which extended from the caput coli to the border of the true pelvis, and was evidently an extension of the meso-appendix. The appendix extended down the inguinal canal, in which it was acutely bent, and ended in a slightly bulbous tip a short distance above the testicle. In the canal there was neither remnant nor trace of the funicular process of the tunica vaginalis or of a subsequently formed peritoneal diverticulum. T. R. Whipham.

Chronic appendicitis (*'Med. Press,'* 1915, xcix, *p.* 392).—**J. Boyd Barrett** in dealing with chronic appendicitis in children states that of the last 42 operations for appendicitis at the Children's Hospital, Temple Street, Dublin, 24 were done during the chronic stage and only 16 during the acute, which included suppurative conditions. The author lays stress on the fact that in operating upon children Jackson's membrane must receive the same attention as in adults. The relative length of the appendix in children, its poor blood-supply, and its abundance of lymphoid tissue render it liable to inflammation. The meso-appendix is short, and if it becomes œdematous and the appendix stiff and catarrhal there is a tendency to kink and so diminish the blood-supply to the extremity. The omentum in young children is so short that it cannot wall-off an abscess, and the prevention of general peritonitis can only be brought about by neighbouring coils of intestine. This accentuates the necessity for early appendicectomy.
T. R. Whipham.

Hirchsprung's disease (*'Cleveland Med. Journ.,'* 1915, xiv, *p.* 1).—**Wm. E. Lower** gives a summary of the theories concerning the causation of dilatation of the colon, which include mechanical, neuropathic, inflammatory, and congenital factors. It is three and a half times more common in males. Constipation and abdominal distension are the primary symptoms. The subjects of this disease are emaciated and often affected with tetany, and in children the mentality is often impaired. The best surgical treatment is to divide the ileum and implant it into the rectum. If improvement ensues, the large bowel above the anastomosis is excised. Lower excised the entire colon from the hepatic flexure to the rectum in a boy of 11, who was attending school. Every month he had attacks of complete obstruction with considerable difficulty in emptying the colon. The contents of the bowels weighed 8 lb. The patient died, but not from any local condition.
Christopher Rolleston.

Tuberculosis of the hernial sac: some points in its pathology and clinical course (*'Clin. Journ.,'* 1914, xliii, *p.* 609).—**J. T. Morrison.** —About 25 per cent. of the cases are found in children under 5 years of age. It is usually believed to be secondary to a focus elsewhere. Hydrocele is frequently present with it; the pathological changes may consist of grey tubercles, the fibro-caseous type, viz., nodules which may or may not break down and form pus. An irreducible swelling is commoner than in uncomplicated herniæ. The cord and sac may be markedly thickened. The mortality is about 11 per cent. F. R. B. ATKINSON.

Pneumococcus peritonitis (*'New York Med. Journ.,'* 1914, c, *p.* 1167). —**Kahn** gives the diagnostic points as follows: Sudden onset with high fever, pain, vomiting, diarrhœa. Abdominal rigidity may or may not be marked. The patient is ill out of all proportion to the abdominal signs. Leucocyte count is high. In one half the cases the lung is not involved. The process is at first general and later tends to be localised, and the author considers operation is best delayed till the localisation has occurred, if the diagnosis be certain. J. PORTER PARKINSON.

Streptococcal peritonitis of genital origin (*'Arch. de Méd des Enf.,'* 1914, XVII, *p.* 441).—**H. Schwers.**—A girl, aged 2 years and 4 months, was admitted to hospital with acute peritonitis. A diagnosis of perforated appendix was made and laparotomy performed. Diffuse peritonitis was found, but the appendix and other abdominal organs were normal. Death occurred four hours after the operation. The necropsy showed acute purulent infection of the whole genital tract. Cultures from the pus of the abdominal cavity and the genital organs showed numerous streptococci and a few staphylococci, but no gonococci. J. D. ROLLESTON.

Some acute surgical diseases of the abdomen in children (*'New York State Journ. Med.,'* 1915, XV, *p.* 133).—**L. Miller Kahn** remarks on the progressive development of surgical treatment of intra-abdominal affections in children. After discussing certain anatomical differences the author deals with several conditions, including appendicitis, intussusception, pneumococcus peritonitis, intestinal obstruction, in which operative interference may be called for. In the diagnosis of the acute abdomen of the child one need scarcely consider infection of the gall-bladder or perforation of gastric or duodenal ulcer, as these conditions are practically unknown. The gentle, palpating hand, with the child's attention elsewhere, is very informing. A full urinary bladder has often obscured a possible diagnosis. No examination of a sick child is complete without a bi-manual palpation of the abdomen; that is, with one finger in the rectum and the other hand on the abdomen. Referred pain in the abdomen must never be out of mind. Practically all of the acute conditions of the abdomen of the child have a way of giving warning by sudden onset, which is followed by a period of quiescence. This quiescent period lulls the child, the parent. and often the physician. Up to a certain point children stand operation well, but there is a definite limit to their resistance, and care must be exercised not to go beyond it. Exposure of viscera, loss of blood, and prolonged anæsthesia affect children badly. Ether is the anæsthetic of choice, and preferably by the drop method. Little infants should be swathed in cotton and operated upon a warmed table. They should be protected against the loss of bodily heat. Nothing adds so much to the speed of an operation as knowing in advance what one is to deal with and what one will have to do. Recognising the pathology and going immediately to it surgically without unnecessary exploration is the best way to insure success. J. ALLAN.

Congenital elevation of the scapula (Sprengel's deformity) of familial type (*'Am. Journ. Dis. Child.,'* 1914, VII, *p.* 357).—**H. Neuhof.**—

In a family consisting of 19 members 11 were affected. Of the 4 parents 2 were examples of bilateral congenital elevation of the scapula. Seven of their 15 children showed the unilateral and 2 the bilateral deformity. Neuhof regards Sprengel's deformity as a manifestation of atavism.

J. D. Rolleston.

A case of Sprengel's deformity (*'Am. Journ. Med. Sci.,'* 1914, cxlviii, *p.* 521).—**G. Fetterolf** and **J. H. Arnott** describe in detail the bony and muscular anatomy of a case of unilateral deformity in a man, aged 40 years, on whom a complete autopsy was held. J. D. Rolleston.

Vicious attitude of the scapula (*'Arch. de Méd. des Enf.,'* 1914, xvii, *p.* 347).—**Nageotte Wilbouchewitch** describes a condition in which the apex of the scapula is raised to a higher level than that of the corresponding side, the left shoulder not being appreciably lowered. The scapula rotates round its articular angle, carrying the internal angle towards the cervical region, and the inferior angle upwards and forwards, the axillary border becoming horizontal and the spinal border oblique in a downward and inward direction. There is no malformation, contracture, or paralysis. The faulty position is due to the combined action of the inferior rhomboid and subspinatus muscles, perhaps in association with the two upper bundles of the serratus magnus, which are hypertrophied. The faulty position of the scapula depends on repeated and badly directed efforts on the part of the muscles to overcome the spinal curvature.

Christopher Rolleston.

Hemimelia thoracica (*'Arch. of Ped.,'* 1914, xxxi, *p.* 707).—**F. L. Wachenheim** on examination of a girl, aged 1 year, found that her left hand and left lower forearm were missing. The mother attributed this to her having seen a one-armed child when she was three months pregnant. The distal end of the stump was rounded with five projecting tubercles, each about 1 mm. high, bearing at their apices rudimentary nails. The skin of her finger-nails was intact, thus showing that her case was not one of intra-uterine amputation. X-rays showed that the upper ends of the radius and ulna were normal, the shafts stunted, the lower ends rudimentary or absent, and the carpus, metacarpus, and phalanges entirely missing. As the extremities are differentiated into three segments in the middle of the second month of intra-uterine life, the arrest of development must have taken place at least one month before the supposed maternal impression. The case also proves that the development of the skin is chiefly dependent on its being pushed out and stretched by the growth of the bones underneath. The growth of the epiblast depends entirely on that of the mesoblast, but its secondary developments, such as nails and teeth, are laid down irrespective of its growth. J. D. Rolleston.

So-called congenital scoliosis (*'Journ. Amer. Med. Assoc.,'* 1915, lxiv, *p.* 305).—**H. B. Thomas** discusses the ætiology of congenital scoliosis, and thinks that in some cases the length, insertion, and uneven attachment of the muscles may be the cause. Cases due to congenital bony defects come under a different category. An instance of the latter is reported. The patient was a girl, aged 5 weeks, with no history of syphilis. She was poorly nourished, and had a double hare-lip, cleft palate, absence of the globes of the eyes, and right lumbar and left dorsal scoliosis.

X rays showed a tilting of the pelvis to the left and abnormalities of all the vertebræ and of the ribs on the right side. The infant died from pneumonia.

T. R. Whipham.

Lumbo-sacral spina bifida; congenital articular rigidity of both knees in extension; double equino-varus; malformation of the anus (*'Journ. de Méd. de Bordeaux,'* 1914, lxxxv, *p.* 158).—**H. L. Rocher** and **J. Souchet** report this case in a female infant, aged 3 months. There was no history of syphilis. The spina bifida was of the myelo-meningocele type, and was constituted by a heart-shaped, flattened, sessile tumour, the apex directed towards the sacrum. There was no hydrocephalus. There was incontinence of urine and fæces, and rectal examination showed a lack of tonicity of the sphincter. The lower limbs showed marked atrophy of the muscles, and the patellæ were very atrophied. The anatomical form of the spina bifida contra-indicated surgical interference. The spinal hypoplasia accounted for the incontinence of urine and fæces and muscular atrophy, but it was difficult to say whether the congenital rigidity and club-foot were due to the same cause or to a vicious attitude *in utero*. The rigidity would probably be diminished by massage, and the club-foot would be treated by ordinary methods at ten months of age.

J. D. Rolleston.

Congenital absence of the left fibula (*'Journ. de Méd. de Bordeaux,'* 1914, lxxxv, *p.* 440).—**H. L. Rocher** records a case in a male infant, aged 2 years, of congenital absence of the left fibula, associated with talipes equino-valgus and antero-posterior curvature of the tibia. The whole of the lower limb was atrophied, especially in the leg portion. Rocher had previously operated on the patient's sister, aged 6 years, for a bifid right thumb. The mother had had a miscarriage four years previously, but showed no sign of syphilis, and her pregnancy and delivery in her present case had been uneventful.

J. D. Rolleston.

Review.

La Tuberculose de l'Enfant: Traitement de ses formes médicales et chirurgicales par la Tuberculine. By D. L. Jeanneret. Preface by Prof. Hutinel. Paris: J. B. Baillière et fils. 1915. Price 6 fr.

The title of this work is likely to be misunderstood, as it gives one the idea that it is devoted to treatment, whereas of the 157 pages only 37 are concerned with treatment and 120 to generalities and narration of cases. The author devotes a large space to the opinions of numerous pædiatrists regarding tuberculin treatment and also considers the theories advanced to explain its action. He is a warm advocate for the treatment by intradermo injection proposed by Mantoux, with old tuberculin for preference, and considers with a good deal of redundancy that it is the treatment *par excellence*. He describes fully the dosage and method of employment of tuberculin and also describes Beraneck's tuberculin, but shows it is much more expensive than tuberculin and therefore has its limitations. The author makes out a good case for his method of treatment *à la* Mantoux, which is well worthy of trial, and those desirous of trying it should read his book.

F. R. B. A.

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Original Articles.

TUBERCULOMA OF THE PONS VAROLII; PULMONARY TUBERCULOSIS IN A BOY, AGED 3½ YEARS. DEATH, NECROPSY, REMARKS.

By Leonard Guthrie, D.M.Oxon., F.R.C.P.Lond.,
Physician Paddington Green Children's Hospital, and Hospital for Epilepsy and Paralysis, Maida Vale.

A boy, aged 3½ years, was admitted on February the 2nd, 1915, at Paddington Green Children's Hospital on account of paralysis of the sixth and seventh cranial nerves on the left side, weakness of legs, and signs of consolidation of the apex of the left lung.

History of previous illness.—About Christmas, 1914, he was confined to bed for a fortnight with bronchitis and pneumonia. On getting up, his legs were very weak, but by holding on to things he could walk a little. A squint in the left eye was noticed ten days before admission. His appetite had been poor, but he swallowed without difficulty and had no regurgitation through the nose nor vomiting. He was losing flesh, and his cheeks were often flushed. A cough which he had had "off and on since birth" had become worse. He made no complaint of headache or pain of any kind.

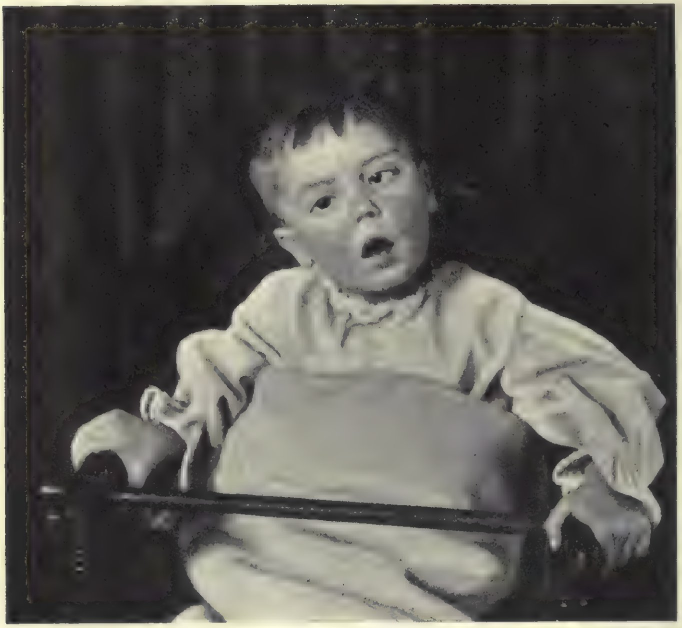
Previous history.—Whooping cough when a baby; measles and bronchitis at two years.

Family history.—Father, aged 32 years, mother, aged 29 years;

both healthy. Four children living. (1) F—, aged 7 years, healthy. (2) M—, aged 5 years. Now in hospital suffering from tuberculous consolidation of apex of left lung and serous pleuritic effusion. (3) Patient. (4) M—, aged $1\frac{1}{4}$ years (died of "bronchitis" whilst patient was in hospital). Two other children died of bronchitis in infancy.

Condition on admission.—A thin, feeble child, with dusky flush on cheeks, extremities cold and blue. Dull and apathetic, but quite intelligent. Temperature 101° F., pulse 138, respiration 48, regular, not laboured nor pneumonic in character. Cough frequent and paroxysmal. When sitting up, the chin constantly deviated towards the left side, and the head inclined towards the right shoulder (*vide* Fig. 1).

Fig. 1.



Eyes.—Pupils, optic discs and fundi normal. No tubercles.

Oculo-motor nerves.—Complete paralysis of left sixth nerve. Eyeball strongly turned inwards. No outward movement beyond mid-line. Power of inward movement of right eye was also lessened.

Face.—Complete paralysis of left side. Left eye could not be closed, and the left side of face and mouth remained immobile, and the mouth was drawn to the right when the child smiled. No loss of sensation on either side of face. The tongue was protruded straight. Soft palate moved normally. Hearing was unaffected. Apparently only the left sixth and seventh cranial nerves were paralysed.

Upper extremities.—No apparent weakness nor hypotonia, nor tremors, nor ataxy. Tendon jerks not exaggerated.

Lower extremities.—Movements free, no spasticity nor hypotonia. Knee-jerks active, rather more so on the right side. Ankle clonus absent. Plantar responses sluggish and flexor in type. The child's general weakness made it inadvisable to test powers of equilibrium, standing and walking.

Lymphatic system.—Tonsils enlarged, and also slight enlargement of posterior cervical, axillary and femoral glands.

Chest, anteriorly.—Percussion note dull at left apex as far as third rib. Breath-sounds over this area almost amphoric in character and accompanied by loud coarse *râles.*

Posteriorly.—Many *râles* heard at both bases, but no areas of dulness nor signs of consolidation present.

Heart.—Normal.

Abdomen.—Normal.

Von Pirquet's test gave markedly positive reaction.

Course of illness.—Until death, six weeks after admission, the child lost weight, but otherwise only slight changes were noted in his general condition. The temperature remained normal or subnormal with occasional rises to 100° F. or 101° F. Respiration varied between 20 and 40, and pulse-rate from 80–130. The dulness of the left apex of the lung and signs of consolidation became much less intense, but scattered *râles* were always audible throughout the lungs. He took his food well and did not vomit nor complain of headache.

He was a quiet, taciturn child, but answered questions sensibly, and took a languid interest in his toys, especially a small cannon with which he proposed to shoot the Kaiser.

The characteristic " cerebellar " inclination of the head to the right shoulder and deviation of the chin to the left side remained constant, and also the paralysis of the left face and left external rectus. About three weeks after admission slight vertical nystagmus was noted, and a fortnight later he appeared to be insensitive to fairly sharp pin pricks all over the trigeminal area on both sides. No signs of implication of other bulbar nerves were discovered, nor was there any evidence of involvement of the descending motor tracts.

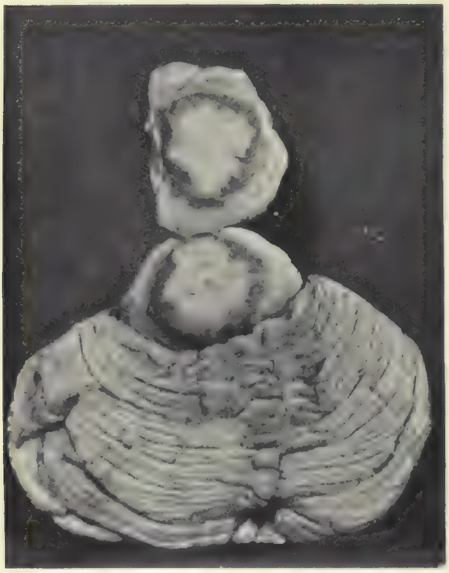
Owing to his general weakness he was not allowed out of bed until March the 21st, when he was able to walk unsteadily with a little assistance and showed a tendency to fall towards the right side.

That evening he was seized with general convulsions, and died five hours later.

POST-MORTEM EXAMINATION (MR. HERBERT PERKINS).

A fairly well nourished boy. Rigor mortis present.

FIG. 2.



Brain.—On removal nothing pathological was detected except, perhaps, some broadening of the pons Varolii. There was no evidence of meningitis.

On section, however, the pons was found to be occupied in its centre by a tuberculous mass about one inch in diameter (*vide* Fig. 2). The outline of the mass was roughly circular. It was of a yellow-green colour surrounded by a somewhat raised congested border. The mass was not quite central in the pons, but was situated rather more to the left of the centre than the right.

Histologically, the tuberculous focus was found to be much more diffused than the macroscopic appearance indicated. None of the pontine nuclei or nerves could be identified.

As the brain was removed from the base of the skull, a small tumour, about the size of a cherry, was left behind, loosely attached to the cribriform plate of the ethmoid. It was of a dark red colour; its centre on section was soft and caseating. Two or three similar masses were found just beneath the cortex on the frontal lobes; apparently arising in the infolded pia mater. They were but loosely connected with the brain substance. The cerebellum was free of such foci of infection. The ventricles were not distended.

Tongue, larynx, trachea were normal.

Pleuræ and *lungs.*—Throughout the lungs many miliary tubercles were found scattered. There was some fibrosis at the left apex with dilatation of the bronchioles. The bronchial glands were enlarged, pale, and soft, but not obviously caseating, although distinctly tuberculous. A few tubercles were found on the pleural surface.

Heart and pericardium normal.

Spleen.—A few tubercles were present on the surface. The remaining abdominal organs appeared normal.

The abdominal glands were not enlarged nor did they appear tuberculous.

REMARKS.

It seems strange that a tumour involving the greater part of the pons and almost centrally placed should have affected so few of the cranial nerves, and these almost entirely on the left side, and also that signs of implication of the pyramidal tracts were limited to slight exaggeration of the knee-jerk on the right side.

The explanation is that the tumour originated in the left side of the pons, involving the sixth and seventh nuclei and origin of the nerves, but in its growth displaced rather than destroyed surrounding structures. Involvement of the left cerebello-pontine peduncles was shown by the tendency to fall to the right, and by the pose of the head which was inclined towards the right shoulder, whilst the chin pointed in the opposite direction. This characteristic "cerebellar attitude," together with the complete paralysis of left sixth and seventh nerves, was suggestive of a tumour in the left cerebello-pontine angle. But, apart from the rarity of tumours in this position in young children, the fact that the auditory nerve escaped damage, the weakness of inward movement in the right eye (conjugate deviation) showed that the nucleus of the sixth nerve was involved and not the extra-medullary portion of the nerve alone;

whilst the bilateral analgesia of the trigeminal area, which was noted some days before death, pointed to an intra-pontine and not an extra-pontine lesion. The vertical nystagmus was attributable to disturbance of the cerebello-pontine connections.

Death was due to a primary attack of convulsions, probably dependent upon failure of respiratory centres in the medulla, for no cause in the shape of meningitis was found post mortem; and the amount of miliary tuberculosis of the lungs was not in itself sufficient to be fatal. At least, it was by no means so extensive as in children who have died from this cause alone.

Although pulmonary tuberculosis was found, it was not the cause of death, and therefore the physical signs noticed during life are worthy of comment in the light of the post-mortem appearances.

Six weeks before death, signs of consolidation of the whole of the left apex; namely, dulness on percussion as far as the third rib, respirations almost amphoric and numerous coarse *râles* were noted. But gradually these physical signs became less marked, until, a few days before the child died, only impairment of resonance, some crepitations and harsh breath-sounds below the left clavicle remained.

The post-mortem condition of the left apex, namely, some "fibrosis, with dilatation of the bronchi" was quite consistent with the latter, but not with the earlier physical signs of consolidation.

The case therefore raises the following points for discussion:

Was this consolidation present six weeks before death produced by tuberculous infiltration or by a passing broncho-pneumonia of the left apex of the lung to which miliary tuberculosis was secondary?

The latter view will probably find more general acceptance, yet there is nothing inherently improbable in the supposition that massive tuberculous infiltration of the apex underwent resolution, leaving behind only fibrosis and shrinking of the pulmonary tissues. Similar resolution is known to take place in tuberculosis of the peritoneum.

The diagnosis of pulmonary tuberculosis in early childhood is admittedly difficult. It is a common experience to find the lungs packed throughout with miliary tubercles which during life have given rise to no physical signs except those of slight bronchial catarrh. *Per contra* it is equally common to find nothing but broncho-pneumonia in cases in which the physical signs and clinical course have suggested tuberculosis.

The knowledge that pulmonary tuberculosis in early life is almost invariably miliary in type, and practically in all cases due to dissemination from tuberculous thoracic glands, is of little help, considering that neither miliary tubercles nor tuberculous bronchial glands (unless of considerable size) produce any reliable physical signs of their presence.

The streaks and shadows shown by X-ray photographs are not as yet capable of exact interpretation, nor can reliance be placed upon von Pirquet's and other tests. The discovery of tubercle bacilli in the sputum will render the diagnosis certain, but this discovery is rarely made.

It must therefore be admitted that in young children the diagnosis of pulmonary tuberculosis is only rendered certain by post-mortem examination. But it does not follow that the diagnosis is wrong merely because physical signs disappear and the patient recovers.

Yet many physicians on such grounds are perhaps too ready to conclude that the diagnosis must have been incorrect, and are inclined to be sceptical as regards statistics which purport to show the wide prevalence of pulmonary tuberculosis in young children. One may be sceptical as regards the evidence afforded by physical signs in such cases, yet it is by no means improbable that many infants and young children may recover from repeated attacks of miliary tuberculosis of the lungs which at the time have been diagnosed as bronchitis or broncho-pneumonia.

The frequency with which old tuberculous lesions in the lungs, calcareous glands, and pleuritic adhesions are found in adults who have died of diseases other than tuberculosis is remarkable, and in such cases a history, not of tuberculosis, but of other pulmonary affections, may often be obtained.

The question "Is he likely to develop tuberculosis?" is commonly put to us concerning a child who has suffered repeatedly from so-called bronchitis, broncho-pneumonia, and asthma. It is possible that the correct answer may be that he has already had it, and that further attacks of miliary tuberculosis may occur so long as any active focus in the shape of tuberculous bronchial glands exists.

The statement commonly accepted that the broncho-pneumonia of measles and whooping cough often ends in tuberculosis perhaps only applies to children whose bronchial glands are already tuberculous. At all events, many children die after long protracted broncho-pneumonia, and no signs of tuberculosis are found after death. One might expect, too, that children who suffer from bronchiectiasis and fibroid lungs would fall an easy prey to tuberculosis, but as a matter of fact they do not. They are victims to chronic infection by pneumococci and staphylococci, but not by the tubercle bacillus.

Returning to the case which forms the subject of these remarks, the post-mortem examination shows that the tuberculous process in the lungs was becoming quiescent. Had it not been for the tuberculoma of the pons recovery might have taken place.

As to the focus of infection, although the bronchial glands were not obviously caseating, they were distinctly tuberculous, and it is more likely that they were the source of dissemination throughout the lungs than that the tuberculosis was secondary to simple bronchopneumonia of the left apex. It is, of course, impossible to regard the tuberculoma of the pons as the primary lesion.

I am indebted to Dr. S. N. Corry, house physician, for the clinical notes and photos, and to Mr. Herbert Perkins for the post-mortem records of the case.

LOCALISING BRAIN SYMPTOMS (HEMIPLEGIA AND HEMISPASM) AS EARLY EVENTS IN TUBERCULOUS MENINGITIS.

By C. O. Hawthorne, M.D.Glasg.,
Physician to the Hampstead and North-West London Hospital and to the Royal Waterloo Hospital for Children and Women.

In many cases of tuberculous meningitis, perhaps in the majority, the early diagnosis is difficult because the symptoms are general, vague and indefinite; indeed, it is not very unusual for the disease to run its course to a fatal termination without any more precise announcement of a brain lesion than a gradually increasing coma, with or without vomiting. In other instances there occur, in addition, motor disturbances—paralyses or convulsions—which, in such circumstances as those just proposed, are highly significant and make the identification of the clinical picture a fairly confident and easy one. A squint is perhaps the most frequent of these paralyses, though other localised palsies are far from being unknown. Convulsions, also, are not uncommon in the later phases of the disease, and while they may occasionally be localised, their distribution is in most instances widespread and bilateral. Speaking generally, all such events are relatively late phenomena, and it is their postponement which is largely responsible for the preliminary period of diagnostic hesitation or uncertainty, qualified though this may be by a greater or less measure of suspicion.

As a contrast to this story of gradual and insidious movement and of defective and delayed clinical definition, it is necessary to note that occasionally tuberculous meningitis has an abrupt onset, and that this may take the form either of localised palsies or of localised convulsions. Such experiences are hardly likely in themselves to suggest tuberculous meningitis, seeing that the palsies and convulsions of this disease are usually, not early, but late features of the clinical history. The diagnosis in such circumstances may review the possibility of an intracranial tumour or of an attack of encephalitis; or again, and perhaps still more likely, at least in regard to convulsions, an explanation may be hoped for in the direction of "reflex irritation" arising from such influences as troublesome dentition, digestive disturbances, intestinal parasites and so on, such a view of the position being facilitated, perhaps, by the temporary character of the convulsive or paralytic events. There would seem, therefore, to be some practical value in illustrations of the statement that a localised paralysis or a unilateral convulsive seizure may mean the clinical beginning of tuberculous meningitis. So wide a departure from the usual course of the disease may readily mislead both diagnosis and prognosis, and the occasional cases which illustrate it are therefore worthy of record. It is from this point of view that the two following cases are summarised and presented. In each instance the sequel placed the diagnosis beyond doubt, but at the outset it was not easy to frame a confident interpretation.

The first patient was a boy, aged 10 years. He had at one time had some enlarged glands, but otherwise had enjoyed very good health. On September the 18th he was said to have been sick while at school, but this was regarded as a matter of no consequence, and on the two following days he was as active and happy as usual. During the night of the 20th, however, he again vomited, and in the morning it was noticed that his speech was peculiar and his face "drawn." Examination showed a paralysis of the left face and left upper limb, with a doubtful extensor response in the left foot. The paralysis disappeared in the course of forty-eight hours and the boy seemed quite well again. But on the following day there were repeated convulsive seizures, limited to the left limbs, and apparent inability to speak, though no coma or unconsciousness. On the cessation of the convulsions left hemiplegia was again observed, but otherwise clinical examination was entirely negative, this remark including both the fundus oculi and the cerebro-spinal fluid. During the convulsive seizures the temperature rose to 101° F., but prior to this it had been normal or just above 99° F. Later the paralysis entirely disappeared, but headache, persistent vomiting, febrile temperatures, and abundant cellular elements in the cerebro-spinal fluid left no room for uncertainty in the diagnosis. In the early days of the case, however, it was not easy to be confident. The boy, it is true, had twice vomited before the paralysis was observed, but he made no complaint and showed such little evidence of general disturbance that his mother took him out to the doctor's house, and it was there that the hemiparesis was noticed. At that date a diagnosis of tuberculous meningitis would have appeared in sharp contradiction to the patient's general condition, yet subsequent events showed that this was the true interpretation. (I am indebted to Dr. J. D. R. Monro for assistance in completing the notes of this case.)

The second patient was a boy, aged 1 year and 7 months. He was brought hurriedly to the hospital because he had been suddenly seized with convulsions, and these, it was seen, were strictly limited to the right side; the rectal temperature was 98·2° F. The child was at once admitted, and after an hour or so the convulsions ceased. On the following day he seemed quite well and there seemed to be no reason to resist the mother's determination to take him home; there was no paralysis or other evidence of organic disease, and the cerebro-spinal fluid was free from any excess of cells and from micro-organisms. In two days' time the boy was again brought to the hospital with further convulsive seizures, and he gradually developed characteristic signs of tuberculous meningitis, though no bacilli were found in the cerebro-spinal fluid, which, however, showed a mild degree of lymphocytosis. The diagnosis was confirmed by post-mortem examination.

As in the first case, the peculiarity of the second record is the early development of motor disturbances suggesting a localised lesion in the brain and ceasing before the more generalised symptoms of meningitis displayed themselves. The absence of change in the earlier examinations of the cerebro-spinal fluid is likewise illustrated in each record, but this is hardly an uncommon experience in tuberculous meningitis; the same may be said of the failure to find tubercle bacilli even in the later tests.

The question may be asked, How are these early, sudden, limited, and transitory developments of paresis in the one case and of convulsions in the other to be explained? Convulsions and paralysis are, of course, not infrequent in the later stages of tuberculous meningitis, and are then presumably due to such events as increased intracranial pressure, encephalitis, and cerebral softening following vascular obstruction. It is not easy to apply any of these explanations to an early and temporary hemiparesis such as is described in the first of the two cases here recorded; and though the invasion of the disease, as is the case also in other infections in childhood, may be marked by generalised convulsions, the cause of these, whatever it be, will hardly apply to the strictly unilateral spasm which marked the onset of the second case. On the face of both histories there would appear the suggestion that the sudden and limited motor phenomena marked the arrival of the specific irritant within the cranial cavity and its application to a localised area of brain tissue. That the tuberculous meningitis was in each instance a development secondary to some primary tuberculous focus may be accepted as certain, and indeed in the case of the infant this issue is closed beyond moral doubt, as the necropsy showed extensive disease of the mediastinal glands. Presumably from such primary source the irritant reached the brain through the blood-stream and in the fashion of an embolus or, more probably perhaps, as multiple minute emboli. It is not difficult to believe that the sudden arrival of such emboli, if and when they fell in force on the motor cortex of one hemisphere, would be capable of producing in the cortex disturbances which might express themselves clinically either as unilateral convulsions or unilateral paralysis. Nor is it difficult to advance to the position that this sudden blow might, after a time, be followed by a local recovery of nerve function with consequent disappearance of the convulsions and paralysis. The subsequent appearance of the signs of a generalised meningitis must doubtless be explained by the tendency of the specific irritant, when once implanted, to produce a gradually extending infection. Perhaps the chief difficulty in accepting such an explanation is the rarity of such events as are here recorded. Tuberculous meningitis is usually, if not invariably, secondary to primary tubercle existing in the chest or other part of the body, and equally the infection is commonly conveyed by the blood-stream. Why then do the specific emboli not frequently announce their arrival by such localising events as unilateral convulsions or hemiparesis? To say that the emboli are not usually distributed in the fashion necessary to produce these manifestations is consistent with the facts, but it only pushes the difficulty back by a stage. The position is, however, hardly more acute here than it is in relation to the localisation of emboli generally, for it would be a hard task to explain why such bodies, arising from corresponding sources, say the left auricular appendix, show in different cases a great variety in the pattern of their distribution. The same comment may be made in relation to the problem now at issue, and it does not seem possible to carry the position further than to say that, whilst such an experience is not common, the arrival of the infection in tuberculous meningitis may be marked by limited motor phenomena suggestive of a localised cerebral lesion. That a localised tuberculous lesion within the skull may be the centre from which may spread a diffuse meningitis seems highly probable, if not certain, seeing that occasionally with tuberculous meningitis a limited area of obviously old-standing disease is present. In such cases the first infection has doubtless become controlled, and later, under influences which cannot be defined, has presumably taken on renewed activity. Again, occasionally in a case of phthisis pulmonalis there develops some acute cerebral event—for example, an ocular paralysis—and after an interval, it may be of several weeks, the symptoms of a generalised meningitis appear. Here, also, the probabilities would appear to be that a limited infection has resulted from the entrance of the irritant into the blood-stream, that it has for a time remained limited, and later has given rise to a spreading infection by continuity or contiguity of tissue. In the cases recorded in this paper it is suggested that the order of events is similar to that just described, with this trifling exception, that the period of limitation or quiescence of the primary cerebral infection was of less duration, being, indeed, a matter of days rather than of weeks. In this way it seems possible to explain both the early and local distribution of the paralysis and convulsions and the subsequent development of the usual clinical features of the disease.

[Two case records with histories similar to those described in this paper are reported in an article by Dr. L. W. Sauer in the 'Archives of Pediatrics,' 1914, xxxi, p. 902.]

HERNIA OF THE STOMACH THROUGH THE DIAPHRAGM IN A CHILD AGED 9 YEARS.*

By W. J. S. Bythell, M.D.,

Physician to the Electro-Therapeutical Department, Ancoats Hospital, and Medical Officer to the X-ray Departments of the Manchester Children's Hospital and Salford Royal Hospital.

The following notes upon this case of hernia of the stomach through the diaphragm are of interest from both the surgical and the radiographic points of view.

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* This case was reported to the Electro-therapeutical Section of the Royal Society of Medicine on April the 16th, 1915.

The patient, a boy, aged 9 years, was admitted to the Manchester Children's Hospital on January the 6th, 1914. The previous history (which was obtained with difficulty) consisted of attacks of persistent vomiting for some six months, the condition steadily getting worse. Apparently there was never at any time much abdominal pain.

On admission the child was extremely thin and looked ill. The abdomen was dull on the right side from the costal margin downwards, and tympanitic on the left. The right rectus muscle was distinctly prominent. For the first seventeen days after admission he vomited nearly every day, usually profusely; there was no abdominal pain or tenderness. The child appeared to be getting thinner. A diagnosis of pyloric obstruction was made from the clinical symptoms.

FIG. 1.

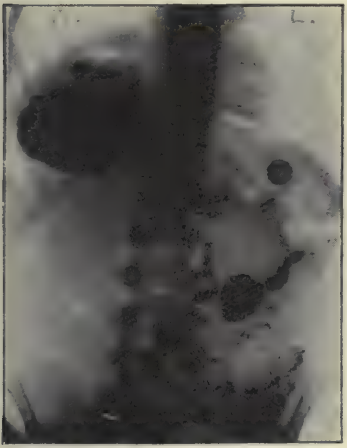
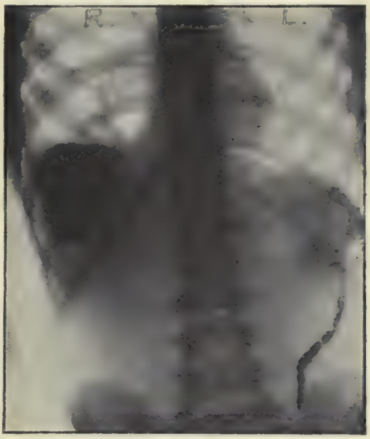


FIG. 2.



On January the 19th he was sent to me for X-ray examination. On giving him a bismuth meal I found that it passed to the right of the middle line instead of to the left at the cardiac orifice, suggesting at the commencement of the examination that the stomach was transposed, although the position of the heart was normal. The outline of the stomach, however, was not that of a normally shaped stomach merely transposed to the right, but more like that of the upper sac of an hour-glass stomach. There was also obvious delay in the emptying of the organ, as nothing had passed through the pylorus at the end of seventy-five minutes. When I saw him twenty-four hours later, the whole of the bismuth was in the large intestine; the latter was normal in shape and position, except that the transverse colon was somewhat high in the abdomen.

The following day I saw him five hours after another bismuth meal. As will be seen from Fig. 1, the greater part of this meal was still in the stomach on the right side of the middle line; a small quantity having passed into the small intestine was situated chiefly in the ileum. The skiagram also suggests that the transverse colon is higher than normal as it was taken with the child in the upright position.

The next day I arranged for him to be sent to my rooms in order that my partner, Dr. Barclay, might see him with me. Fig. 2 shows the condition on that occasion. The whole of the bismuth previously given had disappeared with the exception of a small trace in the descending colon, and on giving another meal we found that it again passed to the right side.

At no time did I see any bismuth actually pass out of the stomach, so I was unable to obtain any information as to the position of the pylorus.

The diagnosis was not clear at first. My original idea was that the stomach was perhaps dragged over to the right side by adhesions with mechanical obstruction of the outlet, but Dr. Barclay afterwards suggested the possibility of a hernia of the stomach through the diaphragm, and on consideration this seemed to me to be the most likely diagnosis, as the lung structures at the right base could be seen clearly through the air-distended fundus.

On January the 24th, three days later, Mr. Howson Ray, surgeon to the hospital, operated, and the following details are taken from the hospital notes: "On opening the abdomen to the right of the middle line, and displacing the right rectus outwards, the epigastrium was found occupied by the colon; only a small piece of the stomach could be seen very far back under the diaphragm. On further exploration the major part of the stomach was discovered herniated through the œsophageal opening. The other abdominal organs were normal. The stomach was brought down and stitched to the anterior abdominal wall by four or five silk sutures, and the abdominal wound closed."

For the next sixteen days the boy did well; there was no vomiting, and he put on weight.

On February the 10th, however, there was profuse vomiting, and he vomited every day up to February the 27th, when he was again sent to me for X-ray examination.

After seeing him I reported that the stomach had passed back through the diaphragm and was exactly as when I first saw him. There was again pyloric obstruction.

On March the 3rd, therefore, Mr. Howson Ray opened the abdomen for the second time, and again found that the stomach had passed through the œsophageal opening of the diaphragm. On this occasion he brought a piece of the stomach through the abdominal incision and did a gastrostomy so as to fix the organ permanently in this position. I may add that at both operations he found that there was a good deal of resistance to the pulling of the stomach down through the œsophageal opening, and that it had a tendency to slip back on relaxing the tension.

I have not seen the boy since the second operation, but the subsequent history appears to indicate that a cure has been attained.

Royal Society of Medicine.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Friday, May the 28th, 1915.

The President, MR. T. H. KELLOCK, *in the Chair.*

Hemiplegia in a Girl, aged 10 years; onset sudden, but without convulsions; no evidence of Visceral Disease.—Dr. C. O. HAWTHORNE.—The child was in good health prior to April the 4th. On that day her mother left her sitting on a chair by the fireside, and when returning shortly afterwards found her lying on the floor paralysed on her right side and unable to speak plainly. She did not observe anything in the nature of a fit or convulsion. When admitted to the hospital on April the 8th the girl had right hemiplegia, was unable to talk plainly, and had a temperature of 103° F. Examination otherwise negative and cerebro-spinal fluid apparently normal. The temperature fell to normal the next day and the paralytic condition soon began to improve.

Cystic Lymphangioma in Infant.—Dr. ERIC PRITCHARD.—This case was shown to the Section on January the 23rd, 1914, as one of persistent "caput succedaneum." Subsequent events have proved this view to be incorrect, and that the tumour was probably a congenital cystic hygroma or lymphangioma in an unusual situation. At the time the diagnosis was obscured by the fact that the tumour was the presenting part (left shoulder presentation) and that the contents of the cyst, which were drawn off by hypodermic needle, consisted of a blood-stained fluid like blood serum. The tumour had continued to increase in size *pari passu* with the growth of the infant.

Child with Defective Patellæ and Contraction of Limbs; Case for Diagnosis.—Dr. H. THURSFIELD.—Child, aged 8 months, with asymmetry of head and chest; thumbs flexed into palms; legs flexed at knee-joints, cannot be fully extended; patellæ and fibulæ obviously defective. Talipes of both feet. Fourth child, full term, natural labour; other three alive. No miscarriage. Mother quite healthy during pregnancy. Diagnosis of condition required, and suggestions as to treatment of the legs.

Case of Polio-encephalomyelitis.—Dr. Eric Pritchard.—The patient, a healthy boy, aged 7 years, developed a squint and double vision on April the 27th. He was brought to the Queen's Hospital for Children on May the 3rd, when he was examined, but no other lesion could be discovered. On May the 8th the parents noticed weakness in right arm and dragging of right leg. On May the 10th he was brought again to the hospital and then complete palsy of the sixth left nerve was discovered. No nystagmus. Discs normal. Partial paralysis of the right twelfth nerve. Shoulder girdle: Some weakness of right side. Arms: No wasting of arm and hand muscles; temperature of both the same; weakness of right arm and hand; grip poor on right; right thumb and fifth finger can only be opposed with difficulty; jerks +, more so on left side. Abdomen: Reflexes on left side active, absent in upper half on right side; no wasting. Legs: No wasting; right leg and foot colder than left; weakness of muscles; knee-jerks active on right, exaggerated on left; no ankle clonus; ? extensor response on right, flexor on left.

On May the 14th the boy was admitted to the hospital. New lesions found to be present. Seventh nerve palsy (incomplete type) on the right side; eighth nerve affected; partial deafness; taste normal. Arms: No wasting; grip on right side weaker than left; jerks exaggerated on right, active on left; total inability to oppose thumb and fifth finger; marked dysdiadokokinesis on right side. Abdomen: Reflexes absent on right side. Legs: Weakness greater on right side; right colder than left; knee-jerks, clonus on right, exaggerated on left; no ankle clonus; Babinski's sign on right side, flexor response on left. No spasticity. Inco-ordination in walking. No Rombergism. Sensation to light, and painful touch on right leg and foot slightly diminished, otherwise normal.

Case of Ectrodactyly.—Dr. J. D. Rolleston showed a girl, aged 3 years. The right upper arm and forearm were of the same size as the left, but the right hand was rudimentary. The right metacarpus was 2·5 cm. long by 4 cm. broad, the left 5·5 cm. by 6·5 cm. broad. The phalanges of the right hand were represented by five small tubercles; the thumb tubercle was the largest, being 9 mm. in length, and alone carried a nail, the little finger was 2 mm. long, and the second and third fingers only 1 mm. long. The thumb rudiment and, to a less extent, the other tubercles were movable at will; there was no trace of a scar. The left upper limb and both lower limbs were normal and there were no other external deformities nor apparent visceral anomalies. Apart from the ectrodactyly the child was well developed. The parents and two other children in the family presented no deformity. The mother attributed the patient's deformity to having seen, during the fourth month of pregnancy, her eldest daughter catch her fingers in a mangle. The girl escaped with slight bruising of the fingers, and the mother did not anticipate the deformity of her child.

Case of Syndactyly of the Left Hand with Constriction of the Right Forearm in a Girl, aged 4 years.—Dr. E. G. L. Goffe.

Amaurotic Family Idiocy (Waren Tay-Sachs Disease).—Drs. F. E. Batten and Mildred A. Jukes showed an infant, aged 11 months, born of Jewish parents at full term, and apparently normal at birth. Weakness of the arms and legs was soon observed, and at the age of three months the mother noticed that the child was blind. The child was the youngest of eight; one sister, similarly affected, died in infancy one year ago. She was a well-nourished child, but feeble; could not sit up without support. There was no rigidity; all reflexes were normal. The child took no notice of her surroundings, lay quietly in bed, and was not irritable. There was some perception of light, otherwise the child appeared to be blind. On examination of the fundi, the typical white patch was seen on the maculæ with a central, cherry-red spot. The cerebro-spinal fluid was normal. The Wassermann reaction was negative.

Pericarditis in Diphtheria.—Dr. Philip Figdor.—A boy, aged 3 years, was admitted to hospital for laryngeal diphtheria on November the 30th, 1914. Tracheotomy was performed shortly after admission, with instant relief. On December the 14th, the cardiac rhythm became irregular. On January the 11th, 1915, a faint systolic murmur was heard at the apex. On February the 27th, the cardiac dulness was greatly increased in both directions, and a soft ventricular murmur was heard at the apex in the axilla and pulmonary area, and there was occasional reduplication of the second sound. On March the 1st, the murmur was heard in all the areas, but best at the apex. The cardiac dulness was slightly decreased on the right. On March the 5th, the general condition of the patient was much worse, cyanosis was marked. The cardiac dulness was greatly increased in both directions, and a harsh, double murmur was heard in all the areas. A diagnosis of pericarditis was now made. March the 8th: Cardiac dulness considerably reduced. A mid-diastolic murmur was heard within the apex. By March the 15th the cardiac dulness was again greatly enlarged, and death took place on March the 23rd.

Post mortem, the parietal and visceral layers of the pericardium showed recent pericarditis. There was about 10 oz. of serous pericardial fluid. Mitral valve: Edges thickened and eroded. Aortic and pulmonary valves healthy. Left ventricle hypertrophied; right ventricle slightly hypertrophied. Great œdema of pericardium and tissues at root of neck, including the thymus. Lungs almost airless; no tubercle; no evidence of consolidation. Very little fluid in pleural cavity. Slight œdema of mesentery. Gall-bladder œdematous, walls being about $\frac{1}{3}$ in. thick.

Case of Hypopituitarism.—Dr. F. Langmead.—The patient was a boy, aged 19 years and 3 months. He was extremely obese, and his general development, mental and physical, resembled that of a boy of 11 or 12 years. The genitals were rudimentary. There was no hair on the face, but some on the suprapubic region. The breasts and general development were of the feminine character. The voice did not appear to have broken. The amount of urine passed varied between 104 and 260 oz. *per diem*. There was a corresponding polydipsia. The optic discs and fields of vision were normal. The blood-pressure ranged between 110 and 130 mm. Hg. Sugar tolerance had not been tested adequately. The diagnosis was established by a skiagram of the pituitary fossa which was seen to be minute, the anterior clinoid processes being greatly thickened.

Localising Brain Symptoms (Hemiplegia and Hemispasm) as early events in Tuberculous Meningitis.—Dr. C. O. HAWTHORNE, (v. p. 232).

Abstracts from Current Literature.

Acute Infectious Diseases.

The incidence of diphtheria in relation to defective drainage (*'Med. Press,'* 1914, II, *p.* 427).—**A. L. Dykes** does not think that defective drainage has much to do with the incidence of diphtheria. In 693 cases of diphtheria in Oldham the house was inspected after notification and the drains examined. Inspection revealed drainage defects in 82 (11·6 per cent.). 1626 houses were inspected independently of infectious disease or complaints of nuisances with the result that in 179 (11 per cent.) drainage defects were found. From these statistics it would appear that in Oldham the relation of defective drainage to diphtheria is an unimportant one.

J. ALLAN.

Acidosis following diphtheria (*'Lancet,'* 1914, II, *p.* 1091).—**H. W. Harding** reports this condition in a child, aged 4 years, who was under treatment for clinical diphtheria (swabs showed presence of Hoffman's bacillus; Klebs-Loeffler bacillus not seen). Symptoms of acidosis supervened when convalescence was well advanced. The vomit had an acid odour, both it and the urine giving the colour reaction with ferric chloride. The child was very drowsy. The condition cleared up under treatment with sodium bicarbonate in large doses.

J. ALLAN.

Rare complications of diphtheria (*'Mitteil. u. d. Hamburg. Staatskrankanst.,'* 1914, xv, *p.* 15).—**F. Reiche** records 47 cases observed by him in recent years. In 31 the gastric mucosa was involved by secondary diphtheritic processes; in 25 of these the stomach was alone affected, in 4 the œsophagus and in 2 the rectum as well. In 4 the membrane extended over the whole of the gastric mucosa, in 5 there were extensive areas, and in 4 the changes were localised to the cardia. Lesions in the œsophagus were noted in 12 cases, apart from those in which membrane in the upper part of the œsophagus was directly continuous with that in the larynx. The lower third of the œsophagus was chiefly affected, especially the part next the cardiac opening; in only 1 case did the upper third show a slight change. In 7 the lesions were slight, and in 3 very extensive. In 8 the œsophagus was the only site of complications; in 4 the stomach was also affected. In 2 the duodenum showed similar changes—in one case the duodenum was affected alone, and in the other in association with a similar lesion on the ileo-cæcal valve. The ileum was affected in another case in seven different points. The rectum was involved in 4 cases, twice alone and twice in association with gastric lesions. In one of these cases numerous diphtheria bacilli were isolated from the muco-sanguineous stools during life. In a puerperal woman who contracted severe faucial diphtheria the vaginal portion of the cervix was covered with membrane containing numerous diphtheria bacilli. Two cases of anal diphtheria were noted in heredo-syphilitic children, in whom diphtheria bacilli were cultivated from the anal condylomata. The 44 cases with complications in the alimentary tract were with one exception children, and all except the two cases of anal diphtheria had unusually severe attacks of diphtheria and died; none showed any symptoms permitting a diagnosis of the complications during life. In 38 cases bacteriological examination was made of the blood from the right heart. In 16 it was sterile, 4 showed diphtheria bacilli, 3 diphtheria bacilli and *Streptococcus hæmolyticus*, 9 *Streptococcus pyogenes hæmolyticus*, 2 *Staphylococcus pyogenes aureus*, 1 *Diplococcus lanceolatus*, and 3 mixed infections. J. D. ROLLESTON.

The Schick reaction and its practical applications (*'Arch. of Ped.,'* 1914, XXXI, *p.* 481).—**W. H. Park, A. Zingler** and **H. M. Serota.**—Experiments have shown that diphtheria is only contracted by those who have no antitoxin or only a minute quantity in their blood and tissues. Schick's reaction, which is a simple method for determining the presence of this antitoxin, depends on the local irritation of a minute quantity of diphtheria toxin injected subcutaneously. If antitoxin is absent or present only in very small amount a positive reaction appears in twenty-four to forty-eight hours, characterised by a circumscribed area of redness and slight infiltration. It persists seven to ten days and then fades, leaving brownish pigmentation. The dose of toxin required is $\frac{1}{50}$ the minimal lethal dose for a guinea-pig in ·1 c.c. or ·2 c.c. of normal saline. The writers have used the test on 700 children admitted to the scarlet fever pavilion of the Willard Parker hospital, among whom 400, or 57 per cent., were negative. The 300 positive cases all received some form of toxin-antitoxin mixture. Of those who reacted insufficiently to immunisation with toxin-antitoxin mixtures, forty-two developed clinical diphtheria, mostly of a mild type. The percentage of positive reactions was highest between the ages of one and four years. It was less during the second six months of life and less in older children and in adults. The writers' conclusions are as follows: (1) The Schick reaction is a reliable and convenient index of the susceptibility or non-susceptibility of individuals to diphtheria. (2) It is an accurate clinical test to determine the efficiency of active immunisation with toxin-antitoxin mixtures. (3) It helps in the diagnosis of clinically doubtful nasal diphtheria. (4) It adds further experimental proof to the clinical experience that very toxic cases require early intravenous administration of large doses of antitoxin. (5) The results obtained in families suggest other causes besides infection with virulent bacilli as factors in the production of natural antitoxin. J. D. ROLLESTON.

Schick reaction (*'Journ. Amer. Med. Assoc.,'* 1915, LXIV, *p.* 1203).—**H. N. Bundesen.**—Observations by numerous workers, notably Schick, of Vienna, and Park, of New York, show that the blood serum of about 80 per cent. of the newborn, from 50 to 60 per cent. of children, and 90 per cent. of adults contains sufficient diphtheria antitoxin to make them insusceptible to diphtheria, and hence makes it unnecessary for them to receive a prophylactic injection of antitoxin. A practical method for determining whether or not a person is susceptible to diphtheria has recently been devised by Schick. For the carrying out the test it is essential to have an accurate 1 c.c. all glass hypodermic syringe, having a scale divided into ten parts, and a short platinum iridium needle, sufficiently fine to be introduced between the layers of the skin. To introduce the needle have the opening or bevelled aspect of the point looking upward and hold the head of the syringe lower than the point when introducing the needle into the skin. The skin of the flexor surface of the forearm is prepared by cleaning with tincture of green soap and 95 per cent. alcohol. With the thumb and first finger of the left hand pinch up a small portion of the skin and carefully insert the needle into, but not through the skin so the opening in the point of the needle is covered and so the needle can be seen beneath the superficial layer. A dilution of a fresh standard diphtheria toxin is made of such a strength that 0·1 c.c. contains $\frac{1}{50}$ of the minimum lethal dose for a 250 grm. guinea pig, and this is injected, pressure being exerted in an upward direction. If the injection has been properly given there is to be seen at once a white bleb-like elevation which persists for several minutes and is distinctly studded with little pits corresponding to the opening of the hair follicles. The results are available at the end of twenty-four hours. If antitoxin is absent or present only in very small amounts—insufficient for protection—a positive reaction appears, which is characterised by a constantly increasing circumscribed area of redness and induration of from 10 to 25 mm. in diameter that reaches its maximum in forty-eight hours. It persists for about a week, and on fading shows a brownish pigmentation with superficial scaling and a characteristic central infiltration. Positive reactions indicate that there is less than $\frac{1}{30}$ unit of antitoxin in 1 c.c. of blood serum. Such persons are susceptible to diphtheria. Though intensity of the reaction varies in different individuals, a well-marked redness indicates a complete or almost complete absence of diphtheria antitoxin. Faint reactions point to the presence of small amounts of antitoxin. There are no antibodies in the serum of children taken ill with diphtheria; those persons taken sick prior to injection with antitoxin always give a positive skin reaction, while the negative intracutaneous reaction always proves the existence of protective bodies in sufficient numbers for prophylaxis against diphtheria toxins. Thus by means of the Schick test we are in a position to tell definitely who is susceptible to diphtheria, and when an epidemic breaks out can inject those and those only, paying no further attention to the ones giving a negative reaction. In regard to the new-born, their high percentage of immunity is undoubtedly accounted for by the fact that the colostrum and even the milk of nursing mothers to a certain degree is antitoxic. Park concludes that infancy is protected from most of the common communicable diseases through this absorption from the colostrum during the first days of life. Bacillus "carriers" invariably have a high antitoxin proportion and depend on this factor for immunity. A fact which is worthy of note is that children of the same family invariably gave a similar reaction. They were either all negative or all positive.

T. R. Whipham.

Some observations of the Schick test (*'Journ. Amer. Med. Assoc.,'* 1915, LXIV, *p.* 1205).—**C. Graef** and **G. Ginsberg.**

The intradermic diphtheria toxin test (*'Journ. Amer. Med. Assoc.,'* 1915, LXIV, *p.* 1206).—**E. E. Moody.**—These two papers both deal with the same subject as the foregoing. The authors come to practically the same conclusions and agree as to the value of the Schick test.

T. R. Whipham.

An analysis of 62 fatal cases of diphtheria (*'Med. Journ. of Austral.,'* 1914, I, *p.* 370).—**W. F. Litchfield.**—The cases were as follows: Malignant diphtheria 31 cases; laryngeal 26; laryngeal and severe pharyngeal 3; laryngeal and malignant 1; pharyngeal 1. Twenty-nine cases were in males, 33 in females; laryngeal diphtheria chiefly affected children under 4 years. In deaths due to heart failure the pulse slowed down at the onset of the heart failure; in those due to toxæmia, the pulse was always rapid. One of the commonest symptoms of heart failure was vomiting. Hæmorrhages into the skin or mucous membranes always ended in death. The temperature was no guide to the severity of the disease. Great restlessness and pain of an agonising character in the upper part of the belly were frequent. The cause of death in severe toxic diphtheria was usually heart failure, in laryngeal diphtheria asphyxia and pneumonia. Large doses of antitoxin from 50,000 to 140,000 were employed.

F. R. B. Atkinson.

Intravenous injection of diphtheria antitoxin in children (*'Amer. Journ. Dis. Child.,'* 1915, IX, *p.* 59).—**E. H. Schorer** reports on fourteen cases injected by the external jugular vein according to the method employed by Wollstein for obtaining blood for cultures (*vide* British Journal of Children's Diseases, 1913, X, *p.* 78). Sixteen injections in all were given, consisting of 5000 units in ten cases, and of 10,000 units in six cases. In four an immediate reaction followed, manifested by a marked chill, a rise of temperature from 103·2° to 104° F., and in two cases by respiratory distress. All the symptoms disappeared in from three to twenty hours. Four subsequently developed an ordinary serum reaction. Two died, death occurring from seven to fourteen hours after the first injection in each case.

J. D. Rolleston.

Abortive scarlet fever in the first months of life (*'Derm. Wochenschr.,'* 1914, LIX, *p.* 1120).—**Levi.**—Children during the first months of life if exposed to infection possess no special immunity to scarlet fever. The disease in such cases, especially in infants nursed by mothers who have recently had scarlet fever, appears to run a mild abortive course.

J. D. Rolleston.

Gonococcus septicæmia with arthritis following scarlet fever (*'Arch. of Ped.,'* 1914, XXXI, *p.* 804).—**M. Nicoll, jun.,** records three cases in a girl, aged 21 months, a boy, aged 5 years, and a girl, aged 6½ years. The two girls had a vaginal discharge containing gonococci; the boy had no urethritis, but no urethral smears were examined during the arthritis. All presented a maculo-papular eruption which suggested a blood infection. The presence of gonococci in the blood showed that the arthritis was not scarlatinal. Two of the cases were treated with polyvalent gonococcus vaccines, but the course of their disease did not differ from that of the one in which vaccines were not used. All recovered. J. D. Rolleston.

A case of infective megalerythema with Rumpel-Leede phenomenon (*'Riv. di Clin. Pediat.,'* 1914, XII, *p.* 914).—**L. Sympa.**—A boy, aged 13 years, on the eighth day of a febrile attack in which the temperature ranged from 38° to 40° C., noticed an eruption on the thorax and abdomen, chiefly on the left side. At the commencement of the third week of the illness he was brought to hospital, when he was found to have a temperature of 38·6° C., pulse 112, a dry coated tongue red at the edges, slight stomatitis, and injected fauces. Nothing else abnormal was noticed, but a maculo-papular exanthema of a wine red colour; the papules were darker at the centre with distinct margins, varying in size from a small lentil to a halfpenny; pressure caused some fading. They were almost confluent on the sides of the thorax, back and abdomen. In the groins, inside the thighs, and distal extremity of the limbs the eruption left here and there small tracks of normal skin. Scratch marks were visible in places. The face was little affected and pallid and, like the hands and feet, slightly œdematous. Widal's reaction was negative; there were no Klebs-Loeffler bacilli; slight polynucleosis was present; when a bandage was applied to the arm for the purpose of giving an intravenous injection, the eruption in the part below the bandage became much more intense and of a blackish colour, assuming a distinctly hæmorrhagic character, as occurs in scarlatina (Rumpel-Leede phenomenon) with a distinct line of demarkation. After four or five days of injections of corrosive sublimate the temperature began to decline and the eruption to fade, but the application of the bandage always produced the same phenomenon, though with diminishing intensity. Desquamation followed. The whole illness lasted two months.

VINCENT DICKINSON.

Measles: incubation, infectivity, immunity, early manifestations (*'Arch. of Ped.,'* 1914, XXXI, *p.* 885).—**C. Herrman** has not seen an *incubation period* of less that seven or more than fourteen days, and thinks that in some of the reported cases with a longer incubation period the source of infection may have been difficult to determine or some may have been cases of rubella. The time which elapses between the initial rise of temperature and the appearance of the eruption varies from one to five days and is usually two to three days; the time between the appearance of Koplik's spots and the eruption one to five days, usually one to two days. *Infectivity*: For several years Herrmann has stated that measles is contagious for only three or four days. The disease is contagious from the beginning of the catarrhal symptoms to the fall in temperature, the latter usually corresponding to the time of completion of the eruption. The blood is probably infectious from the initial rise of temperature to its fall in uncomplicated cases. The secretions of the nose and mouth in sneezing and coughing are the carriers of the infectious material. The scales of the skin play no part. Isolation of two weeks or more is unnecessary—five days at most are enough. Herrman has often admitted children with a fading measles rash (who had a complication or some other disease) to a hospital ward and has not had any infection of the other children in the ward. *Immunity:* Probably not more than 2 to 3 per cent. of all individuals are immune. Herrman has never seen a second attack of measles. Many of the reported cases will not bear analysis. It is necessary that Koplik's spots should have been observed in both attacks, for fever, catarrh, and a morbilliform eruption are not sufficient. Infants under five months are practically immune. Herrman has seen only three undoubted cases of measles under five months. This immunity is found in the artificially fed as well as in breast fed, and is not confined to the first-born. *Early manifestations:* (1) Fever. A rise of temperature is the first definite symptom. The curve is not characteristic, but an intermission of twenty-four hours after the initial rise is very suggestive. (2) Decrease in weight. Herrman has not found this of great practical value. It averages only a few ounces, and may be caused by a number of slight derangements. (3) Changes in the blood. During the incubation period, about six days before the eruption, there is a leucocytosis; during the invasion there is leucopenia with a distinct diminution in the eosinophiles and a relative and absolute dimunition of the lymphocytes. (4) Enlargement of the lymph nodes is present in a large number of patients, but occurs frequently in other diseases which may be confused with measles. (5) Oral manifestations. Koplik's spots are pathognomonic. The eruption described by Flindt on the palate and Comby on the gums are not. Herrman has sometimes observed hæmorrhagic spots on the buccal mucosa as an early manifestation, as well as redness and swelling of a small mass of lymphoid tissue on the posterior portion of the soft palate just above the notch between the uvula and the posterior pillars of the fauces. Grumann ('*Munch. med. Wochenschr.*,' 1914, LXI, *p.* 132) has recently described small specks or streaks on the tonsils which are present two or three days before the eruption. (6) Conjunctival manifestations. The caruncle at the inner canthus becomes red, swollen, and injected at the very beginning of the catarrhal stages, and frequently shows Koplik's spots on its reddened surface.

J. D. ROLLESTON.

Ecthyma gangrænosum in measles ('*Arch. f. Derm. u. Syph.*,' 1914, CXX, *p.* 739).—**A. Takahashi** records seven cases in Japanese infants, aged from 8 months to 2 years. Four died within a month, one recovered, and in two the issue was doubtful though probably fatal. Four different forms are described: (1) The ordinary form, in which vesicles, pustules, and ulcers develop on the posterior surface of the legs and the backs of the hands and feet. (2) A hæmorrhagic necrotic form. (3) A phlegmonous form specially affecting the abdomen and genital region. (4) A furuncular form whose sites of predilection are the trunk and head. In addition to the ulceration, the pathological anatomy consists in a septic spleen, degenerative changes in the parenchymatous organs, broncho-pneumonia, swelling of the lymphoid tissue and occasionally subcutaneous hæmorrhages and intestinal ulcers. The changes in the skin appear to start in the sweat glands. Bacteriological examination in the first case showed staphylococci, streptococci, and diphtheroid bacilli, the latter being also present in the blood. In the other cases only *Staphylococcus aureus* was found. J. D. ROLLESTON.

Observations on rubella ('*Semaine Méd.*,' 1914, XXXIV, *p.* 144).—**Spieler.**—An epidemic of rubella occurred in Vienna from November, 1911, to June, 1912, with the highest morbidity for twenty years. The incubation period varied considerably, but on the average was sixteen to seventeen days. A buccal enanthem was seen in 82 per cent.; in 30 per cent. there were punctiform hæmorrhages and in 2 superficial necrosis of the buccal mucosa. A prodromal fever was noted in five cases, lasting from one to six days before the appearance of the eruption. The temperature was never higher than 38° C. The cubital glands were enlarged in 50 per cent. and the thoracic in 16 per cent. The spleen was never affected. There was sometimes slight transient albuminuria; the diazo-reaction was always negative. The blood during the incubation period showed a neutrophile polynuclear leucocytosis, and during the eruption a moderate leucopenia with a relative neutrophile leucopenia and a relative lymphocytosis. In 16 per cent. there was gingivitis after the appearance of the rash. The tuberculin cuti-reaction was not affected by rubella. One case had a relapse six or seven days after the appearance of the first eruption. J. D. ROLLESTON.

A case of generalised vaccinia ('*Edin. Med. Journ*,' 1915, I, *p.* 44).—**R. C. Low.**—The disease occurred in a child, aged 3 years, who, owing to extensive seborrhœic dermatitis, had not been previously vaccinated. A younger brother had been vaccinated in the usual way and apparently the mother, who had been dressing the baby's vaccinated arm and at the same time treating the older boy's skin for seborrhœic dermatitis, had accidentally vaccinated him on the right thigh. Two excellent photographs are given to illustrate this somewhat rare condition. J. ALLAN.

Remarks on whooping-cough with especial reference to asphyxia and continued fever (or constitutional whooping-cough) (*'Med. Journ. of Austral.,'* 1915, I, *p.* 211).—**M. C. de Gavis** divides pertussis into the ordinary and the constitutional form. The latter shows a tendency to recurrent fever and asphyxia, and is very fatal, especially in the aborigines. She describes six cases, four of which died.

F. R. B. ATKINSON.

Convulsions during pertussis (*'New York Med. Journ.,'* 1914, C, *p.* 1054).—**L. Fischer.**—A baby, 8 months old, a fortnight after commencing pertussis had convulsions recurring about every six hours. Colonic injections of bromide and chloral gave no relief, neither did chloroform anæsthesia. Lumbar puncture was equally unsuccessful. The right ventricle was then aspirated through the anterior fontanelle and 20 c.c. clear fluid withdrawn with the result that the convulsions ceased entirely and did not recur. The child made a perfect recovery. The writer recommends this treatment for cases of severe frequent convulsions in pertussis.

J. PORTER PARKINSON.

Typhoid fever in children (*'Am. Journ. Dis. Child.,'* 1914, VIII, *p.* 130).—**H. D. Chapin.**—The paper is based on the study of eleven cases aged from 2 to 8 years. The duration of the fever varied from seven to forty-two days. In only five did the temperature run very high, two reaching 106° F., one 105° F., and two 104° to 105° F. Blood examination showed that the red cells were about normal in number and that there was no appreciable leucopenia. There was an abnormally high percentage of polymorphs. The gastro-intestinal symptoms were not severe. Vomiting at the onset occurred in four, and during the fever in one. Five had diarrhœa, five were constipated, and one showed no abnormality. In no case was the spleen palpable. The patient's received the ordinary ward diet with the exception of meat, viz. milk, cocoa, eggs, bread, toast, crackers, cereals, jelly, potatoes, gravy, broths, custard, junket, apple sauce, orange, ice cream, and lady fingers. Meals were given every three hours throughout the day. Seven cases gained in weight during the fever, two showed a slight loss, and two an appreciable loss. Two cases developed tonsillitis, two otitis media, one hypostatic pneumonia, one pyelitis, and one bronchitis, but none of the complications were very severe and there were no relapses. J. D. ROLLESTON.

High caloric diet in typhoid fever of infants and young children (*'Am. Journ. Dis. Child.,'* 1915, IX, *p.* 387).—**L. E. La Fetra** and **L. C. Schroeder** report on forty-eight cases aged as follows: Under 2 years one case, from 2 to 6 years twenty-one cases, from 7 to 12 years twenty-six cases. They were fed three-hourly with the usual food for a child in health except that the only meat was creamed chicken. To increase the caloric value of the liquid food, which was practically always milk, lactose, cocoa, and usually cream were added. The general rule was to have the protein calories not less than 7 nor more than 15 per cent. of the total number of calories given. The total number of calories taken varied from 100 to 300 calories per kilogram. Unless toxic nervous symptoms were present, the fever did not prevent the child taking a generous diet, but as the temperature fell, the amount of food taken was greater. The result of this diet was that the general condition of the patients was remarkably good. The so-called "typhoid state" occurred in a much smaller proportion than under the old methods. Only six had abdominal distension and in but one was it severe. Five had intestinal hæmorrhage, but in only two was it severe. Thirteen were irrational during the early stage of the disease. The writers think that most of the severe nervous symptoms of the late stage are due to starvation and the consequent increase in the toxæmia. Only one death occurred, due to pneumonia, four had relapses. Sixty per cent. gained in weight during the course of the fever, and it was found that 92 per cent. had gained weight on leaving the hospital. J. D. Rolleston.

A fatal case of rabies in a child (*'Canad. Journ. of Med. and Surg.,'* 1914, xxxvi, *p.* 245).—**J. G. Fitzgerald.**—A girl, aged 4 years, was admitted to hospital suffering from nervousness and was said to have fits or spasms. She had been bitten by a dog seven weeks before, which had been kept under observation for ten days and shown no symptoms. Pasteur treatment had, therefore, not been given. Death took place two days after admission. Histological examination of the brain failed to reveal Negri bodies. A rabbit and guinea-pig were then given an intra-cerebral injection of an emulsion of the brain. The rabbit died twenty-four days later with symptoms of rabies, though no Negri bodies were found in its brain. In the guinea-pig, which died thirty days after inoculation, these bodies were present.

J. D. Rolleston.

A case of bacillus dysenteriæ septicæmia (*'Journ. Amer. Med. Assoc.,'* 1914, lxiii, *p.* 1853).—**W. T. de Sautelle** reports the case of a 3-weeks-old breast-fed infant which had been in perfect health before the onset of the disease. For a day or two the baby refused to nurse, became irritable, restless and did not sleep. The child was stupid and listless, whined at times, and objected to the slightest touch. Physical examination revealed no abnormalities or pathological processes in any of the organs. The temperature was 103° F. and pulse 180. At this time there was no diarrhœa. In consideration of the fact that the grandmother of the infant was suffering in the same house with typhoid fever, a blood-culture was made and the *B. dysenteriæ* was obtained in pure culture. Although the baby's toe was carefully cleansed and the blood dropped directly into the bouillon, not much significance was paid to the result of the culture. The baby continued to have a fever varying from 101° to 104·5° F .in spite of antipyretic measures, and also developed a watery diarrhœa. Five days later the baby suddenly began to have severe convulsions which came on every few minutes and lasted from five to ten minutes. When seen the hands, face and feet were very cyanotic, the pulse thirty to the minute, the breathing of the Cheyne-Stokes type, the pupils dilated and inactive to light, divergent strabismus, the tendon reflexes absent (at the first examination they were normal), and the child comatose. Through a lumbar puncture needle the spinal fluid flowed out quite rapidly, but contained at least one-half blood. The fluid came as bloody at the end of the flow as at the beginning, in fact, the needle was withdrawn and re-introduced at three different places with the same result. After the removal of 3 or 4 c.c. spinal fluid the convulsions ceased for a time, the pulse and respiration improved, and the cyanosis cleared up. The child died several hours later. Post mortem was refused. The spinal fluid obtained was carefully placed in bouillon and an organism found which was identical in all respects with the one obtained in the blood-culture. It was a Gram-negative short bacillus, only sluggishly motile, and did not produce indol in five days, or coagulate or digest milk. It produced acid in litmus milk and this remained so for three days. In dextrose, lævulose, lactose, mannite, galactose, maltose, and dextrin bouillon this bacillus produced acid, but no gas, in twenty-four hours. Saccharose and inulin were unchanged. Death was, no doubt, due to the cerebral hæmorrhage rather than to the toxæmia. The source of infection could not be ascertained. The child was breast-fed and the parents denied having given it any other food. It may have been given unboiled water, but this they also denied. The sick grandmother handled the infant and even kissed it on the mouth several times. The diagnosis in her case, however, was unquestionably typhoid fever, as a blood-culture revealed an organism identical in all its reactions to the *Bacillus typhosus*. T. R. WHIPHAM.

Dermatology and Syphilis.

Pemphigus foliaceus neonatorum ('*Med. Record*,' 1915, LXXXVII, *p.* 63).—**A. L. Henkin** delivered normally, a female child, weighing 6½ lb. On the day after delivery a bulla filled with opaque fluid appeared half an inch to the left of the umbilicus. The temperature was 98·6°. Next day the bulla had increased to an area about two inches long and one inch wide. On the next day all the abdomen was involved. The entire skin of the abdomen came off leaving a raw red surface covered with serum. The area around the umbilicus was gangrenous. The temperature was 103·6°. There was no history of syphilis or tubercle. CHRISTOPHER ROLLESTON.

Hereditary epidermolysis bullosa and congenital pemphigus ('*Riv. di Clin. Pediat.*,' 1914, XII, *p.* 581).—**J. Cappelli** describes two cases. He maintains that while they are easily distinguishable from other bullous affections of the skin such as ordinary chronic pemphigus, dermatitis herpetiformis, and infective pemphigus, they can also be differentiated by clinical and anatomical peculiarities. Points of interest are the hereditary, congenital or familial, the definite and fixed course, the preservation of good general health, and especially the histological changes of a degenerative nature, which are noticeable in the healthy skin not attacked by the eruption. The author considers that the most plausible pathology is a dystrophy of the skin which gives rise to a complex of anatomical and functional disturbances, but he is unable to decide whether this dystrophy has a nervous or endocrinic origin. Owing to the uncertain pathology and obscure ætiology treatment is necessarily symptomatic and powerless. The prognosis is not grave as regards general health, but the patients are condemned to an infirmity, sometimes permanent, caused by pain and interference with activity.

VINCENT DICKINSON.

Mongoloid markings on the ventral aspect of the body ('*La Pediatria*,' 1915, XXIII, *p.* 93).—**O. Cozzolino** records the cases of two brothers, aged 37 days and 9½ years respectively, one of whom had a mark on the antero-internal aspect of the left knee and the other on the antero-external region of the left side of the thorax below the nipple extending to the parasternal line. The younger child has also numerous sacrococcygeal markings, while a third brother, about two years of age, was said to have had typical markings in this region, which had now disappeared.

VINCENT DICKINSON.

The relative frequency of mongoloid marks among the infantile population of Cagliari (*'La Pediatria,'* 1914, XXII, *p.* 801).—**O. Cozzolino** has investigated a large number of these cases occurring in that part of Sardinia and found that 74 children out of a total of 1182 patients presented these marks. In infants under one year the percentage was about 16·8 per cent. A noteworthy fact was that in illegitimate children under one year the percentage was as high as 30 per cent. The author gives a full description of the cases and of the histological appearances in two of them. He draws attention to the familial occurrence of several of them, and even in all of the children from the same marriage, and in two cases was able to trace their existence in at least two successive generations which gives fresh support to the doctrine of the monogenism of the human race. The atavistic theory, which interprets these marks as a physiological characteristic common to all races at a certain period of phylogenetic development, deserves greater consideration in view of their anthropological significance. With regard to the dermatological significance, while their nævoid character cannot be excluded, the following facts are against it: (*a*) concomitant teratological facts may be interpreted as fortuitous coincidences; (*b*) the constancy of the sacro-lumbar and coccygeal site even in multiple and diffuse marks; and (*c*) the transient duration of the these marks. The hæmatic origin of the pigment is excluded by the negative ferric reaction and the melanotic origin must be admitted.

VINCENT DICKINSON.

Mongolian blue spots at São Paulo (*'Arch. de Méd. des Enf.,'* 1915, XVIII, *p.* 154).— **C. Ferreira.**—302 infants, aged from 15 days to 2 years, admitted to the infants' dispensary at São Paulo were classified as follows: Whites 248, mulattos 44, negroes 9, Japanese 1. The Mongolian blue spots were present in 4, or 1·6 per cent., of the whites, in 30, or 68 per cent., of the mulattos, in 3, or 33 per cent., of the negroes and in the Japanese infant.

J. D. ROLLESTON.

Erythema nodosum with facial paralysis and hemiplegia (*'Amer. Journ. Obstet.,'* 1915, LXXI, *p.* 187).—**M. Hahn.**—A male infant, aged 25 months, developed signs of an acute infection with a remittent temperature between 101·4° and 104·8° F. On the fourth day erythema nodosum appeared on both legs. On the twelfth day left facial paralysis occurred and lasted for about a fortnight. On the sixteenth day the child had general convulsions followed by left hemiplegia which also lasted for a fortnight. No further complications took place except successive crops of lichen urticatus in the fourth week.

J. D. ROLLESTON.

Urticaria papulosa (*'Practitioner,'* 1914, XCIII, *p.* 820).—**H. W. Barber.**—The disease is frequently associated with the exudative diathesis and seems to have some connection with it. The exciting causes are gastro-intestinal, teething and external irritation. The eruption consists of urticarial and erythematous plaques, on which appear papules. The treatment consists of attention to the alimentary system by care to the teeth, a dose of calomel or hydr. c̄ creta at night, followed by a saline and rhubarb mixture during the next day. Liquid paraffin given regularly either pure or in emulsion is valuable; intestinal antiseptics, especially ammonium sulpho-ichthyol, are effective. Phenolphthalein in petroleum emulsion (grs. x in ℥j) ʒij–ʒiv twice or thrice daily has done good in some cases; treatment of the nervous system by removal of sources of irritation as elongated prepuce, adenoids and tonsils; local applications; a warm bath at night followed by some soothing preparation as 2 per cent. β-naphthal ointment or zinc ointment with 10 per cent. menthol. In the periods of freedom from the eruption ung. glyc. phenol. subacetatis is of value.

F. R. B. Atkinson.

Dermatitis herpetiformis with tuberculous glands of neck (*'Lancet,'* 1914, II, *p.* 1247).—**W. J. Midelton.**—The patient was a girl, aged 9 years. She had been well up to the age of 3 years, but then developed scarlet fever. An eruption occurred after the original rash died away and was diagnosed as dermatitis herpetiformis. She had been free from the dermatitis from the beginning of August to the end of September 1911; then it recurred and persisted. Counter-irritation had been commenced at the end of February, 1912. At that time the pustules, blebs and scabs were well-marked, chiefly on the inner aspect of the upper third of the thighs and spreading on to the abdomen. Within three weeks she became well. Occasionally slight relapses of short duration had occurred since. About five years ago some tuberculous glands in the neck were operated on and sinuses persisted for over two years. These eventually healed well, but one scar remained bluish red and had whitish specks in it suggesting lupus vulgaris. In May 1913 she had a wound on the right wrist which became septic, but soon healed under treatment. In August 1913, one or two glands in the neck enlarged and one small abscess formed. This was incised, and complete healing took place in a few months. Other glands became inflamed, but no definite abscess occurred. This fact was, in the opinion of the author, significant as showing greatly increased resistance. No sign of the dermatitis has appeared for over eighteen months.

J. Allan.

Dermatitis herpetiformis and chronic bronchial catarrh (*'Lancet,'* 1914, II, *p.* 1248),—**W. J. Midelton** reports a case of dermatitis herpetiformis and chronic bronchial catarrh in a boy, aged 9 years. He had been treated by means of continuous counter-irritation commenced in August, 1912, and carried out once a week ever since. The treatment seemed to check the eruption and the boy's general health had much improved.

J. Allan.

The dietetics of eczema (*'Arch. of Ped.,'* 1915, XXXII, *p.* 175).—**G. D. Lyman** considers a complete examination of the stools should be made in all cases of eczema. In some cases cutting down of the food is all that is required, in others, feeding up; in others a complete change of food is necessary. In uncomplicated cases the fat and carbohydrate percentages are at fault; in some cases the salt assimilation is disturbed, in others, protein digestion is at fault.

F. R. B. Atkinson.

Lupus vulgaris (*'Dublin Journ. Med. Sci.,'* 1915, I, *p.* 302).—**C. M. O'Brien** at a meeting of the Royal Academy of Medicine in Ireland, showed a boy, aged 13 years, who had been suffering from a very pronounced form of lupus for the last nine years. Although it was very widespread the face was practically free; the mucous membranes were also unaffected. The form of disease was what is known as lupus non exedens. The patient had been under treatment at the London Hospital for almost three years, getting one hour's exposure of Finsen light on five days of the week. Since October 1914, he had had three sittings per week of seventy minutes each. The case did not appear to be a victory for the Finsen light, the most that could be claimed was that it stopped the spread. A bacteriological examination of the case had been made, and a positive result had followed the inoculation of a guinea-pig with the lupus tissue. J. ALLAN.

Lupus pernio ('*Dublin Journ. Med. Sci.*,' 1915, I, *p.* 226).—**T. P. C. Kirkpatrick,** at a meeting of the Royal Academy of Medicine in Ireland, showed a boy suffering from a condition which was described as lupus pernio. The patient was affected for three years with sore hands, sore ears, and at one time had a similar affection of his face. The hands were said to be a great deal better now, but much thickening, swelling, and ulceration still remained. He was treated with emollients, and both hands were kept wrapped up. J. ALLAN.

A case of purpura fulminans ('*Gazz. d. Osp.*,' 1914, XXXV, *p.* 1910).—**O. Nicolussi.**—A female infant, aged 8 months, who had had no previous illness, was suddenly seized one morning with high fever and convulsions. The temperature kept high all day, and in the evening there appeared, first on the lower limbs and then on the face, trunk, and upper limbs, small reddish-blue spots which increased in number and size until the whole skin was covered. Death from collapse took place sixteen hours from the onset. There is no mention of a necropsy. J. D. ROLLESTON.

The control and treatment of scabies ('*Med. Pres.*,' 1914, II, *p.* 404). —**F. Hauxwell** points to the difficulty of getting parents to carry out treatment at home, and gives an account of the routine procedure now adopted at St. Helens. (1) Suspected cases are submitted to the medical officer for examination; (2) slight cases and isolated cases occurring in families are advised regarding treatment, and in most cases it is found that directions given are carried out fairly well and the child recovers within a reasonable time; (3) in other cases the health visitor visits the home and inquires regarding the presence of other cases in the home, and reports on the general cleanliness of the premises; (4) if there appears no satisfactory means of home treatment, all cases are removed from the house to the sanatorium, the bedrooms are disinfected with formalin, and the bedding, clothing, etc. removed for steam disinfection; (5) should the house be in a filthy condition, it is dealt with under the Public Health Act, 1875, Section 120. From a six months' trial of this routine it has been found that admission to the isolation hospital gives the best results. J. ALLAN.

X-ray treatment of ringworm ('*Dublin Journ. Med. Sci.*,' 1915, I, *p.* 249).—**E. J. Watson** describes the technique employed and discusses his results in sixty-six cases of ringworm of the scalp treated with X-rays. He has found treatment with tincture of iodine very useful in preventing the spread of the disease until the action of the X-rays has had time to remove the disease by the falling out of the hairs. J. ALLAN.

Some manifestations of congenital syphilis ('*Glasgow Med. Journ.*,' 1914, II, *p.* 401).—**L. Findlay** and **M. E. Robertson** recently carried out a research on some manifestations of congenital syphilis. They believe that the Wassermann reaction, at least in this country, is practically only found in syphilis, and, if properly controlled, is a test of great diagnostic value. A condition of chronic eczema situated at the angles of the mouth, and invading the mucous membrane of the lips, is often of syphilitic origin. Congenital heart disease is not infrequently found in patients suffering from congenital syphilis, as evidenced by a positive Wassermann reaction. About 45 per cent. of cases of spastic diplegia and 60 per cent. of mental defectives also seem to be the subject of congenital syphilis, as evidenced by a positive Wassermann reaction. J. ALLAN.

Treponema pallidum found at autopsy in the blood-stream and elsewhere in a case of congenital syphilis ('*Am. Journ. Dis. Child.*,' 1915, IX, *p.* 126).—**H. C. Clark** and **I. N. Gates.**—A female infant, aged 2 months, was admitted to hospital with rhinitis and a maculo-papular eruption and died twelve hours after admission. Post mortem, the greatest number of treponemata were found in the liver, then in the kidneys, blood from the jugular vein, pancreas, skin and lungs in the order named. The other organs such as the spleen, thymus and brain, yielded sparse findings or in the case of the ovary, uterus, adrenals, voluntary muscles and aorta, none at all. The case showed all the conditions conforming to Colles' law. The mother at the time of the child's death and six months later showed no sign of the disease and gave a negative Wassermann's reaction, while the father who had contracted syphilis two years before the child's birth gave a positive reaction. J. D. ROLLESTON.

Early congenital bone lues ('*Arch of Ped.*,' 1915, XXXII, *p.* 244).—**J. R. Kuth's** conclusions are as follows: (1) Roentgen rays give direct evidence of the disease, and are of practical importance for diagnosis and pathology. (2) The disease is very prevalent and should be borne in mind. It affects chiefly the ends of long bones and is of two kinds; in one, the child is born with lues and in the other the manifestations appear some time after birth. The characteristic lesion is an osteo-chondritis.

F. R. B. ATKINSON.

Laboratory diagnosis in the early stages of congenital syphilis ('*Amer. Journ. Med. Sci.*,' 1914, CXLVIII, *p.* 688).—**C. G. Grulee** states that for all stages of the disease a positive Wassermann is of distinct value and a negative is of little use, since many cases of syphilis exist in which the blood gives no positive reaction. A positive reaction may occur in scarlet fever, and in one twin, but not in the other. The method does not give concordant results in mother and offspring. In thirty-four cases concordant results were only obtained in sixteen. The agreement is less when the mother's disease is florid (38·5 per cent.), than when it is old (60 per cent.). Where there is a disagreement the result is more often positive in the case of the mother. With regard to the cerebro-spinal fluid the globulin content, as evidenced by the Noguchi test, does not give a positive reaction in all cases, and when it is obtained it may be due to conditions other than syphilis. The Lange gold chloride method was also investigated by the author; it consists in the fact that certain albuminous bodies in cerebro-spinal fluid when brought in contact with a solution of colloidal gold cause a clumping of the smaller particles, producing various changes in colour and even precipitation. Positive results were obtained in the cerebro-spinal fluid of nine cases of typical congenital syphilis in dilutions of 1 in 40 and 1 in 80. In many of these cases the Noguchi and Wassermann tests of the cerebro-spinal fluid were negative. Apparently a similar reaction is obtained in cases of pneumonia complicated by serous meningitis In spite of this the author concludes that the Lange test is a means of confirming the diagnosis in infancy.

CHRISTOPHER ROLLESTON.

Diagnosis and treatment of late hereditary syphilis (*'Amer. Journ. Dis. Child.,'* 1914, VIII, *p.* 283).—**B. S. Veeder** and **P. C. Jeans** describe 123 cases of manifest hereditary syphilis. Forty-nine, or 40 per cent., of these were infants under one year affected with rash, coryza and enlarged spleen, while the remaining 74 suffered from late lesions. In only 12 of the 74 was there a definite history of early infantile syphilitic affections. Eighty-three per cent. of the 74 were whites and 17 per cent. negroes. Twenty-three had been breast-fed and only 4 artificially fed. Interstitial keratitis was present in 17, or 23 per cent. The central nervous system was affected in 32, or 43 per cent. Five of 13 cases of hemiplegia reacted positively to Wassermann's test. Similar results were obtained in 2 cases of chorea which had no history or evidence of rheumatism. Hutchinson's teeth were only present in 3 out of 48 possessing permanent incisors. Typical Hutchinson's teeth and interstitial keratitis were, however, seen in a non-syphilitic patient, who reacted to tuberculin, but not to Wassermann's test. The acute cases were treated with three or four intravenous injections of neo-salvarsan, given at an interval of two or three days, and then with grey powder in gradually increasing doses. Old standing lesions such as keratitis or cerebrospinal syphilis did not react to this treatment.

CHRISTOPHER ROLLESTON.

On the value of the luetin reaction in pædiatrics (*'Zeitschr. f. Kinderheilk.,'* 1915, XII, *p.* 239).—**J. C. Schipper,** Superintendent of the Emma Children's Hospital in Amsterdam, tested this reaction in twenty heredo-syphilitic children aged from 3 months to 15 years, and in fifty-four non-syphilitic children aged from 2 months to 11 years. He could not recommend the reaction for the following reasons: (1) It is not sufficiently reliable—in about 16 per cent. of syphilitic cases it is negative, and in 6 per cent. of non-syphilitic cases it is positive. (2) The test requires too much time—at least eight days. (3) The test requires more experience than can be obtained outside large hospitals and clinics. (4) The reaction is negative in wasted syphilitic children (with infiltrated skin or œdema) and often positive or doubtful in children with the exudative diathesis.

J. D. ROLLESTON.

Mongolian idiocy and syphilis (*'Journ. Amer. Med. Assoc.,'* 1915, LXIV, *p.* 1636).—**H. C. Stevens** inclines to the belief that there is a connection between Mongolian idiocy and syphilis. In a series of twenty cases he found that the Wassermann reaction on the blood-serum was positive in 10 per cent., and on the spinal fluid in 25 per cent. Pleocytosis was present in 20 per cent., and the globulin content was increased in 90 per cent. In 90 per cent. also the gold chloride reaction showed colour changes within the luetic zone.

T. R. WHIPHAM.

Hereditary syphilis as a social problem (*'Am. Journ. Dis. Child.,'* 1914, VIII, *p.* 327).—**P. C. Jeans** and **E. M. Butler** studied 108 cases of hereditary syphilis at the St. Louis Children's Hospital. Their conclusions are as follows: As a social problem, hereditary syphilis assumes relatively large proportions, one patient often representing a number of individuals needing treatment. Parents are frequently indifferent and fail to continue treatment. In such cases Wassermann tests or treatment should be enforced. Hereditary syphilis is more frequent and its mortality is higher among the illegitimate than among the legitimate. Hereditary syphilis at St. Louis is two or three times as frequent in the coloured as in the white race, and its frequency is greater among infants than among older children. The waste in potential life by miscarriages and deaths in syphilitic families is twice as great as in non-syphilitic children. Thirty-three per cent. of the syphilitic children over one year had permanent disablement; 18 per cent. of the syphilitic children over one year had long-continued temporary disablement. There is about five times as much feeble-mindedness in syphilitic as in non-syphilitic families. The mortality for artificially-fed infants is five times as high as for breast-fed syphilitic infants, not including deaths from intestinal disturbance. J. D. Rolleston.

The use of neo-salvarsan in mental deficiency ('*Glasg. Med. Journ.*,' 1914, ii, *p.* 241).—**L. Findlay,** as the result of an investigation in cases of mental deficiency, concludes that (1) syphilis is a frequent cause of idiocy; (2) in syphilitic idiocy there may be no luetic stigmata; (3) neo-salvarsan when introduced intravenously or intramuscularly has a very marked effect in improving the mental condition. In carrying out the research Wassermann's test was employed. Notes on four cases are given. J. Allan.

Review.

The Medical Annual: A Year Book of Treatment and Practitioner's Index, 1915. Thirty-third year. Bristol: John Wright & Sons, Ltd. Price 10s. net.

The outbreak of the war, though it has somewhat delayed the publication of this annual, has in no way affected its excellence. The contributors to the various branches of pædiatrics are the same as in previous years. Dr. F. Langmead gives a concise account of recent work on infantile diarrhœa, infant feeding and food disorders in children, congenital stenosis of the pylorus, inherited syphilis, tuberculosis in children, whooping-cough and other subjects. Dr. E. W. Goodall deals with the various infectious diseases. Other articles of pædiatric interest are those on poliomyelitis by Dr. Purves Stewart, rheumatic heart disease by Dr. Carey Coombs, and on gonorrhœal vulvo-vaginitis by Dr. C. F. Marshall. We note with pleasure that besides several of our abstracts from current literature and society reports, the following recent original articles in this Journal receive due notice and acknowledgment: Recurrent diarrhœa in children, intramuscular injections of antitoxin in diphtheria, relapsing pneumonia in children, paroxysmal tachycardia, acute *B. coli* infection of the urinary tract in children, salvarsan and neo-salvarsan in the treatment of hereditary syphilis, smallpox in infants and children, nervous complications of varicella, hæmorrhagic varicella, and tongue chewing.

The new articles in the work to which attention should be drawn are those on the new 'British Pharmacopœia' by Dr. F. J. Charteris, on modern naval surgery by Deputy-General A. Gascoyne-Wildey, R.N., on military surgery by Colonel Louis A. La Garde, U.S. Army, and on antiseptics in war and the method of their employment by Mr. G. Lenthal Cheatle. The present issue has been furnished with a new and more prominent type, which should be much appreciated by readers. J. D. R.

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Original Articles.

THE EDUCATION OF CHILDREN WITH DEFECTIVE VISION.*

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IN this paper it is proposed to present a critical review of the Montessori system of education, particularly in reference to its possibilities in the education of children with defective vision, for which purpose it has been recommended as ideal; and further to draw comparison between this system and that of the "Myope Classes" which originated in this country for this same purpose, and which after an experience of seven years may be taken to have shown what good points they possess. A detailed account of the present development of the myopes classes will be added.

THE MONTESSORI SYSTEM.

In considering any scheme of education it is well to understand how it came into existence, and in particular to recognise the local circumstances that gave a reasonable ground for its vogue. Next, it is well to examine the "scientific basis" on which it is founded, if indeed there be a claim for such basis. Lastly, it is well to inquire how far the local conditions of the place of its birth find a parallel in other places where it is proposed to transplant it in its original or modified form.

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* A paper read before the Ophthalmological Section of the Royal Society of Medicine on March the 3rd, 1915.

The Montessori scheme of education is of Italian origin. It was first devised as a mode of instruction for mentally defective children. Its one special feature, when considered in relation to the existing modes of education then in vogue in Italy, was that there was a real attempt to allow for the personality of the child. The scheme did not aim at a uniform drilling of the minds of the children, but it aimed at awakening whatever of good there might be in the particular child before the teacher. As practised by Madame Montessori the scheme quickly justified itself, for it was far in advance of anything known in the place of its birth. In its revolt against a cast-iron uniformity it came back to Nature and accordingly was bound to succeed, and it did succeed.

Subsequently the scheme was applied to the teaching of normal children, and in so far as it followed the natural lines of allowing for the personality of the child it was an advance on any method that ignored this vital point.

Later the authors of the scheme developed an elaborate scientific argument, asserting the basis upon which the scheme was founded. That argument is to be found in a weighty volume, 'Pedagogical Anthropology.'*

It is conceded at the outset that the scheme was a distinct advance in method upon any educational modes existing in the place of its origin. But when it is proposed to transplant such a scheme to another habitat it is well first to ask if the conditions existing in the proposed new sphere of exploitation make it desirable that it should come into working there, not merely as a new and possibly useful assistant or even competitor, but as a destructive rival of existing methods. The introduction of the scheme into England has been strongly advocated and as vigorously opposed. And for myself I am in opposition to its introduction, for this reason, that the grounds that made for the success of the scheme in Italy do not exist in this country; indeed, I very much doubt if they ever have existed here.

Uniformity is a thing that is totally foreign to the mental habit of the inhabitants of our little islands. We are individualists from our youth up. And so strong is the recognition of this fact that the schoolmasters do not attempt to assert any iron sway of uniformity in our public school system of education. It may be said, with much truth, that the chief educators of our country are the children themselves; in the friction of their several individualities there is an influence for good better than all the schemes of professed educationalists. Under such conditions it matters little what may be the theory of our education, the practice remains correct, and that is the chief thing.

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* 'Pedagogical Anthropology,' by Marion Montessori. Translated by Frederic Taber Cooper. London, 1913.

The same thing exists even under the apparently set forms of education in our elementary schools, all of which have to conform to a "code" set by a Government board. Despite the code there is the same play of individuality in the elementary school, the Council schools, or the old "Board schools" of a more familiar nomenclature. And this recognition of personality is the more pronounced, so far as the class-room is concerned, in the infant departments where alone any comparison with a scheme such as the Montessori could be made. The fact is that all the premises advanced by Madame Montessori have been recognised in this country for generations, and have been acted upon to such an extent that no one has ever thought of talking about them.

To make an exact comparison with the Montessori scheme one should confine the judgment to the schools for mentally defectives. In this branch of education I dare assert there is no better equipped country in the world than England. In England alone there are 183 certified elementary schools for these children, with an average number of 13,110 children on the register; and from my knowledge of the London schools I would assert that it would be difficult to better the modes of training therein adopted. The real reason for the success of these schools lies in the nature of our national character. Not only is there a respect for the individuality of the child with the corresponding desire to cultivate it, but also a subtle sense of sympathy with the weak and disabled, the possession and exercise of which can alone enable the teacher to tolerate a constant association with human beings who are below the level of normal mentality and character. The Montessori system in its one good feature, the feature that has made it a success in the country of its origin, has been anticipated long ago in this country, and to attempt to import it into this country is truly a carrying of coals to Newcastle.

Secondly, it is worth while considering the "scientific basis" for this scheme as propounded in that weighty volume 'Pedagogic

Anthropology.' Madame Montessori avows herself a disciple of Cesaro Lombroso. What he claimed to have done for criminal anthropology the author of this book seeks to do for pedagogy. She writes: "The credit rests with Italy for having rescued anthropology from a sort of Olympus, and led it by new paths to the performance of an eminent and practical service." Until these new paths were discovered, "Anthropology failed to raise itself from the status of a pure and aristocratic, in other words, a superfluous science, a status that prevented it from ranking among the sciences of primary importance." Lombroso's work has been subject to the most extensive and explosive criticism, and there is little left of the elegant superstructure of his criminal anthropology, save perhaps in the lines of the *feuilleton* of the halfpenny daily papers. So recent a piece of work as that entitled 'The English Convict: a Statistical Study,' by Dr. Charles Goring, proves conclusively from the life histories of 3000 convicts that there is no such thing as a predestined type of humanity "born to do evil," and that "there is no definite line of demarcation, no absolute difference in nature, as opposed to degree, between the human beings who are and those who are not criminal."

Madame Montessori's scheme of pedagogy is confessedly based on anthropology of the Lombroso type. She believes that certain marks are definitive of character, but her indications are inconsistent. In one part of the book the glory of the face is made the prime index of character; in another the hand is cited as the one and only indication of capacity—"We can judge from the hand whether a man is fitted for work or not." Putting aside the inconsistency, such claims as these when applied to educational methods are destructive of all sense of impartiality in the teachers. It is hard enough for the best balanced teacher to give due attention to the plain lumpish child when there is a fascinatingly pretty, possibly mischievously roguish, child in the next seat; but to teach the teacher that the lumpish child is a lump and therefore unworthy of the same attention as the rogue would be disastrous, for we are not all what we promise to be.

Lastly, I wish to consider this Montessori scheme as regards its suitability for the training of children with defective eyesight. At the outset there is this difficulty. Most of the children whose eyes are found so defective as to necessitate their receiving special educational attention are not discovered until such an age that they are no longer fit subjects for such an elementary scheme of teaching. This Montessori scheme deals only with the beginnings, and the affected children have for the most part passed that period when discovered. But even supposing that there should be found a number of children of fit age and state of development, would the system be of advantage to them? If we take the claims of the scheme as set forth by its most enthusiastic supporters the answer is emphatically—No. One of the chief and most reiterated claims made on behalf of the scheme is that children taught by this system come to read, as it were unconsciously, fully two years before children taught by ordinary methods. Such an assertion, taking it at its face value, is quite enough to warrant us as ophthalmic surgeons withdrawing our support from the scheme. We do not want children to read two years earlier than they ordinarily do. To read early is no gain, in fact it means an ultimate loss. The child who gains an early facility with printed books learns to forsake the true methods of learning; it ceases to pester its seniors with questions that bubble up from its growing mind, it no longer worries into the why and wherefore of this and that object that it finds in the garden and field, for its little mind is awhirl with the first narcotic of its young life, it is learning to forget the real world in a sham fantasy of the book world. And on the physical side it is getting round-shouldered from much crouching over print, and withal possibly straining eyes that were never meant to do this sort of thing. Educationally there is no gain in early reading, rather the reverse. Physically early reading is a habit to be banned. A scheme that boasts this as a great merit, even if it be only in the mouths of injudicious supporters, is to be looked at askance.

It is said that the method of contact with the subject to be learned is the chief good of the scheme. Things are handled and touched, and not looked at. There is nothing new in this. There is not one of us who did not first learn to live by touch and not by sight; the baby at the breast is the ever recurring proof of this, but we soon find that of all our senses our eyes are those that give us the best and most ready appreciation of things. There are those who have to learn by touch—the blind have only this poor resource for their reading and writing. And there is no one who has not seen the best of these readers but must agree in the inferiority of touch as compared with sight. If this be so with the expert blind, how much more when we consider the first hesitating gropings of the little blind child.

To suggest that we should supplant the use of the sense of vision by that of touch as the chief of our educational methods is to propose a retrogression of the most pronounced character. It would be followed to its logical conclusion if it were proposed to do away with our printed books and use Braille only. The *reductio ad absurdum* can be found in that striking story of H. G. Wells, 'The Valley of the Blind.'

THE MYOPE CLASS.

Special educational methods are necessary for children with defective sight, and there are methods which have been established in this country and carried on with every success. These classes are known as "myope classes" because the greater number of children have defective eyes from this cause. In 1913 I was permitted to give an account of these classes to this Section of the Society. In London there are now seven of these classes working in connection with the public elementary schools. Similar classes have been formed in Bolton, Birmingham, Leicester, Leeds, Oldham, Stoke-on-Trent, Nottingham, Exeter, Brighton, Bristol, Sheffield, and Liverpool. Besides, classes have been established in Scotland, and in not a few cities of the United States. To judge from the published reports from the States the myope class meets as real a need there as it does here, and its exploitation proves as successful.

The myope class is in its basis a very simple and natural affair. It does not claim any extraordinary virtue as an education revolution. But it is claimed for it that it fits a definite situation, and further that it is attractive to teachers and children alike, even though it demands greater skill in the former and more alertness from the latter.

This scheme of myope classes has been working for seven years; it is elastic enough to meet the necessities both of the young children and of the older children, from the ages of 5 to 14, the only ages for which special forms of educational treatment are required. Its principles can be adapted to the individual needs of children attending ordinary schools, both public and elementary, and not a few short-sighted children have been admitted to well-known public schools for girls and boys, and therein have followed satisfactorily their studies with such modifications in their particular interest as this myope scheme has suggested.

In the following pages there will be given an account of the present manner of working these classes in connection with the public elementary schools; it is in this connection that the greatest use has been made of the method, for the number of children with defective vision, of such a grade as prevents their taking safe advantage of the ordinary school curriculum but not such as to necessitate their attendance at a school for the blind, is sufficiently large to afford ample material with which to put the scheme to the test.

Since my last account of these classes was given* there has been a development of the work of the classes along the lines originally drafted. The development has been particularly marked by the correlation of the teaching given in the special class-rooms with that taken by the children in association with the scholars of the normal elementary schools; and further in handicraft work. The curriculum falls into three parts: (1) Oral teaching, taken for the most part in the normal schools; (2) literary work, taken in the special class; (3) handicraft work, also carried out in the special class. For the oral teaching the children are taken over to the associated normal school and drafted into those classes therein for which their attainment provides. They sit in the front row and engage in the ordinary work of the class, except that when any reading or writing work is to be done in connection with the course of study they take no part therein. Similarly they join with the normal children for singing, drill and games (such of them as may safely do so). Both in the

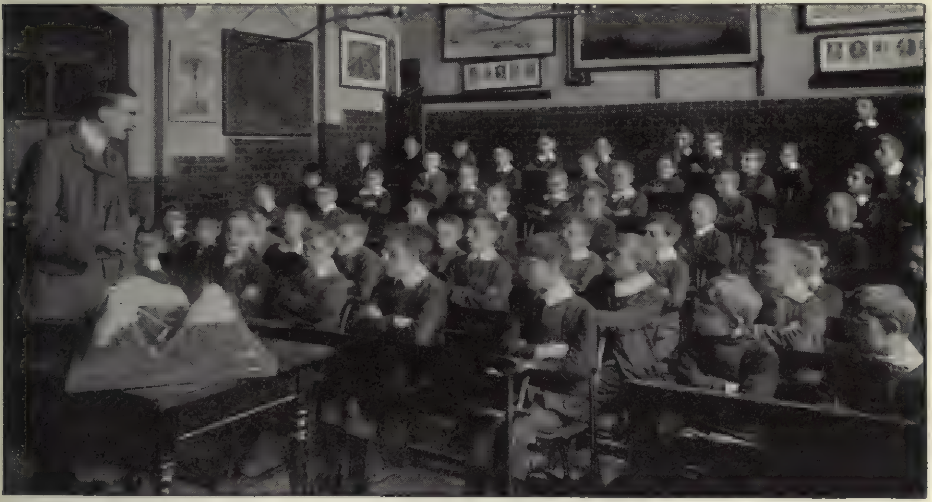

FIG. 1.†—This and subsequent photographs were taken at the first class, which was started seven years ago. A lesson in physical geography is in progress in a class-room in an ordinary elementary school. The front row is occupied by the myopes.

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* 'Proc. Roy. Soc. Med.,' 1913, vi (Section of Ophthalmology), pp. 146–163.

† The blocks used in this article were kindly lent by the National Institute for the Blind.

normal school and in the special class much is made of action songs and musical exercises. Every effort is made to enlist the sympathies of the teachers of the normal schools with the work of these children, so that though occasional scholars they shall be regarded as part of the ordinary school work. And experience proves that these arrangements can be carried through regularly without interference with the proper work and discipline of the normal school. The

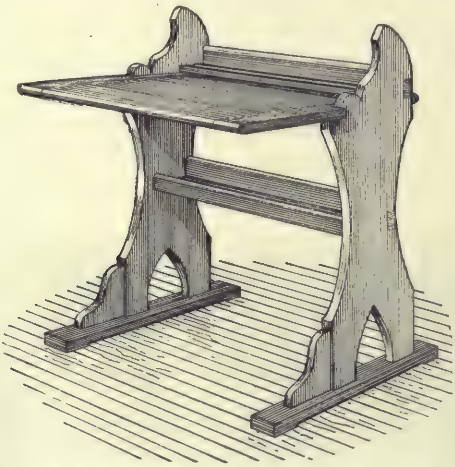

Fig. 2.—Desk in use in myope classes, designed by the author, showing use as table for handicraft. (Made by Messrs. Hammer & Co., Charing Cross, London.)

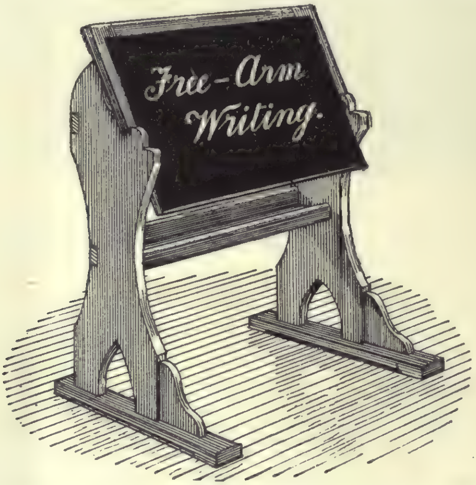

Fig. 3.—Myope desk in use as blackboard for free-arm writing.

children, on the other hand, learn to regard themselves as definitely associated with their normal comrades, to their great advantage, both in the immediate work of their training and for the future when they leave school. So soon as one of these oral lessons is completed the myope children return to their own class-room; there the teachers of the special classes proceed to develop the lessons given in the normal schools. The work becomes in this sense somewhat in the nature of what is known as "preparation" in the public school curriculum. The lesson taken is written out from memory on the blackboard with which each child is provided, catechism is given by the teachers of the myope class, who are familiar with the order of lessons given in the normal school, so that there is a very real fixation of the lesson in the minds of the children. There is further literary work given in the myope class of the sort that is usually written on paper in the normal school, but in these classes all this work is done on the blackboard, or on large printed sheets, which the senior pupils in the classes prepare as part of their work. The manner of printing these sheets is as follows: Large sheets of white

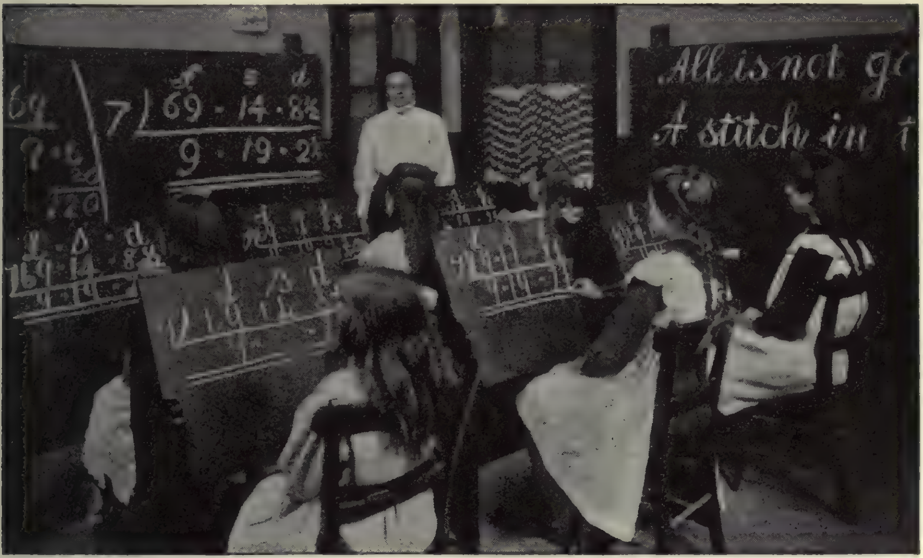

FIG. 4.—Arithmetic lesson in the myope class. The teacher uses the long wall blackboard, whilst each child has its own blackboard provided by the myope class desk. Note the heavy strong lines of the chalk writing, and the bold upright characters. The ordinary thin-lined straggly writing of the lecture theatre is quite inadmissible in these classes. Blackboard writing is an art to be cultivated.

paper are hung up on the walls or blackboards of the room, and thereon are printed, by the use of rubber-faced type of 2 in. and 1 in. square, selected extracts from well-known literature of the kind that can be put to educational use, and also extracts from lessons in geography, history, and the like. Already the myope classes have collected in this fashion quite a library of sheets which are in constant use by both the junior and senior children. The work of printing these sheets is greatly liked by the children, indeed it has become a prize task for the best of the elder children.

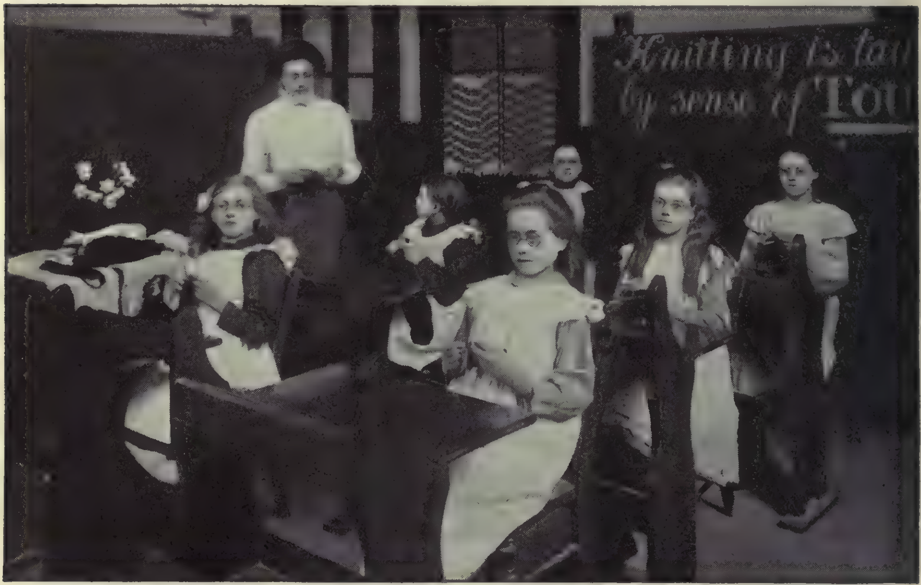

Fig. 5.—Girls knitting. They are taught to work by feel and not by sight; only those who show an aptitude for the work are allowed to practise it.

Arithmetic is practised on the blackboards, teachers and children working together on the wall blackboards and on the individual boards. A great point is made in the development of mental arithmetic, so as to facilitate the association in the mind of ideas of figures without the adjuvant written symbols—many of the children get quite expert in the practice; this is an added safeguard against the excessive use of the eyes in near work. Further, arithmetic is associated with practical work in handicraft.

Handicraft.—The extension of this branch of the work has been given particular attention. The provision of suitable work is by no means a simple matter. The limitations necessarily introduced by the fact that the eyes must not be used for any length of time in the stooping posture, and that the work must not be so fine as to require close application, prevent the use of some of the best, most practicable, and most educative forms of handiwork that can be exploited for school children. There is no better handiwork for boys than carpentry. It is of great interest to them, they make things that appeal to them by their form and utility. The work demands precision and care, and therefore is an admirable training in method and exactitude. The work grows under their hands, and there is outward and visible sign of industry. The boy who puts energy into his work knows that there is fruit to his labour, for he sees it before him, and it is equally evident to him if his work has been done well and soundly or in a rough and slovenly fashion. But carpentry is not good for highly myopic eyes. The necessary drawing of plans, the taking of measurements, and the use of rules and scales, mean too much close work. But more prohibitive is the posture necessary for the effective use of most of the tools employed in the work. Boys are not vigorous of muscle in their upper limbs, and this lack has to be made up by the use of the weight of the shoulders. Sawing, planing, cutting with the chisel, and the like,

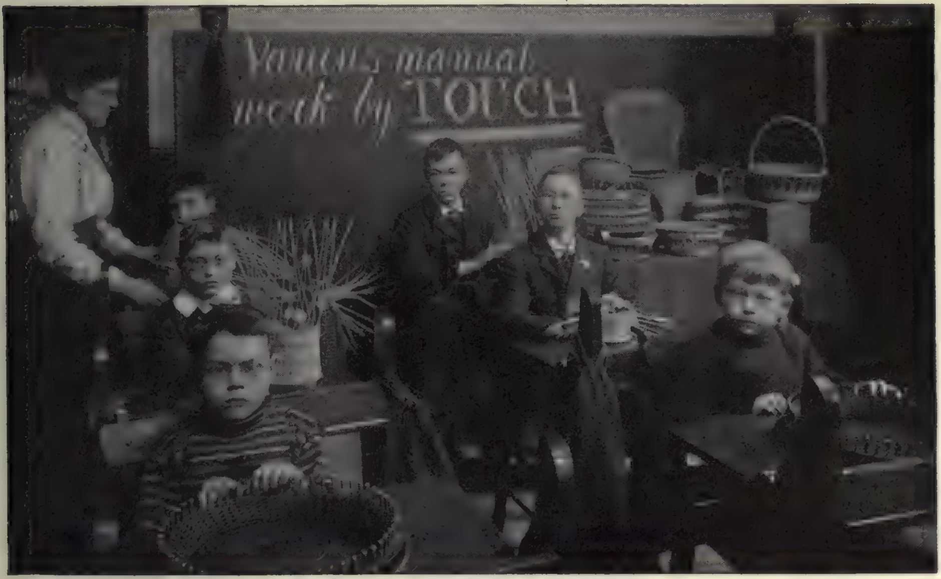

Fig. 6.—Children learning handicrafts. Any kind of work that will teach manual dexterity with the minimum of use of the eyes is admissible; no work that requires constant observation or inspection of small parts should be taught.

require muscular force, and the use of the shoulders tends to develop a stooping habit. At the same time the muscular effort is intensified by a closed larynx and forced contraction of the abdominal muscles and diaphragm, so that the very conditions of strain are induced that are most inimical to the fragile eyes of the short-sighted. These facts show how difficult it is to provide a suitable scheme of handicraft for these children.

(*To be continued.*)

A NOTE ON LYMPHOCYTOMATOSIS OR LYMPHOBLASTOMATOSIS, ESPECIALLY OF THE KIDNEYS.

By F. PARKES WEBER, M.D., F.R.C.P.

IN necropsies on children, and certainly on adults also, it is occasionally found that one or more of the viscera are partially or completely infiltrated with lymphocyte-like or lymphoblast-like cells, which separate the essential elements of the affected organ from each other, but apparently without greatly damaging them. Both kidneys are not very rarely infiltrated in this way, but the disease need not be altogether symmetrical, and one kidney may be affected without the other. A kidney thus diseased is large and pale, and at first sight may be mistaken for a "large white kidney" of chronic parenchymatous nephritis (the large white kidney of amyloid or lardaceous disease would have a somewhat harder and waxy consistence), but the change is not quite uniformly distributed through the whole organ. On microscopical examination the glomeruli and renal tubules are seen more or less widely separated from each other by a diffuse growth of lymphocyte-like or lymphoblast-like cells, but the infiltration is more extreme in some parts than in others. On examining a section under a low power the possibility of acute septic phlegmonous infiltration might suggest itself, I mean like that seen in portions of a kidney in a case of acute ascending pyelo-nephritis; in such inflammatory infiltrations, however, many of the cells are at once seen to be polymorphonuclears (pus cells) on examination under a higher power.

Lymphocytomatosis or lymphoblastomatosis may be defined (as it etymologically signifies) as a disease characterised by the appearance of lymphocytomata or lymphoblastomata, that is to say, by the appearance of tumour-like swellings consisting of lymphocyte-like or lymphoblast-like cells. Such lymphocytomata or lymphoblastomata have, however, frequently been described under the heading "lymphosarcomata" or "round-celled sarcomata." In many recorded and unrecorded cases the patient's blood was never examined during life, but in cases in which it was examined the changes of lymphocytic leukæmia were found present in some and absent in others. Cases in which leukæmic changes are present in the blood may be described as leukæmic, or rather, lymphocythæmic, whilst cases in which the blood shows no signs of leukæmia may be distinguished as "aleukæmic" cases—that is to say, they are cases of "aleukæmic" lymphocytomatosis or lymphoblastomatosis of the kidneys or other organs.

Sometimes the change in the blood is not very characteristic. Thus, in the case of a boy, aged 6 years, whose case was described by Leonard Guthrie and W. D'Este Emery at the Medical Society of London, under the heading, "A Case of Fatal Lymphocythæmia" ('Trans. Med. Soc. London,' 1909, xxxii, pp. 90–101), there was a condition of typical diffuse symmetrical lymphocytomatosis (or lymphoblastomatosis) of the kidneys present, and yet the white blood corpuscles only numbered about 2000 per cubic millimetre of blood, though 80 per cent. of them were lymphocytes. At the necropsy on that case the kidneys were found uniformly enlarged by a firm white growth, which permeated all parts, though not absolutely uniformly; microscopically the renal tubules were seen to be very little destroyed, but widely separated from one another by lymphocytic infiltration. The authors remarked: "At first sight the tubules and glomeruli appear unaffected, simply separated from one another by a thick layer of the lymphoid tissue in which they are embedded; in some places this is three or four times the width of one of the tubules. On closer examination it is possible to detect that there has been a small amount of destruction of tissue, fragments of secreting epithelium being found within the lymphocytic mass. . . . The glomeruli appear normal, except that in some cases there are a few lymphocytes in the tufts. Bowman's capsule is well preserved, even where it is lying in contact with the lymphocytic infiltration, and the epithelium of the tubules is apparently normal." In regard to the appearance of the infiltrating cells the authors write: "The cells are almost devoid of protoplasm, and their nuclei suggest those of a small round-celled sarcoma rather than a true lymphocyte. There is also a very well marked reticulum between the cells; this is best seen in sections of the kidney, where the cells are widely separated and the whole tissue appears somewhat œdematous. In fact, when the case was first examined, lymphosarcoma was considered as a possible diagnosis. . . . The new tissue is deposited apparently uniformly through the kidney, cortex and medulla being apparently equally affected."

Similar appearances were present in some of the cases of "Fatal Lymphocythæmia in Early Life" published by J. Graham Forbes and F. S. Langmead ('Proc. Roy. Soc. Med.,' 1908, i, Clin. Sect., pp. 129–177).

In the 'Transactions of the Pathological Society of London,' 1896 (xlvii, p. 117), I described, under the heading, "Diffuse Symmetrical Lymphosarcomatous Infiltration of the Kidneys of a Child," an obviously similar condition of the kidneys in a little girl, aged 5 years, but in her case the functions of the kidneys were decidedly affected by the infiltrating growth, for the urine examined shortly before her death contained a considerable amount of albumin and a few tube-casts, but no red blood cells. At the necropsy, at first sight, the kidneys resembled very "large white kidneys." Each kidney was symmetrically enlarged to about three or four times the natural size, its substance was pale on section, and the capsule stripped off easily. They gave no iodine reaction for lardaceous disease. A nearer examination showed that they were diffusely

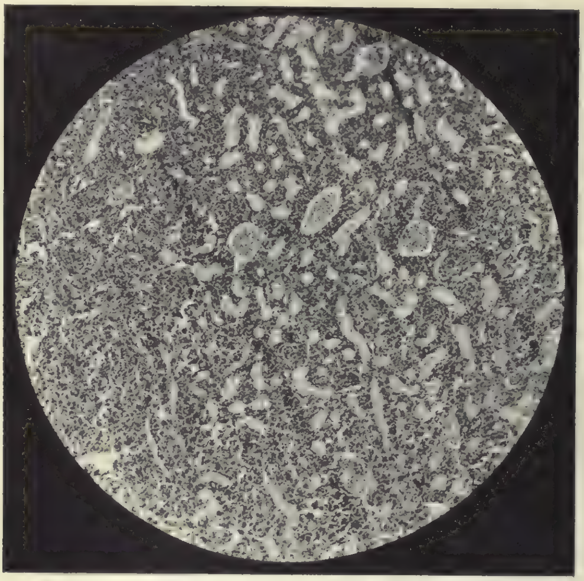

FIG. 1.—Microphotograph of kidney. (× 30).

infiltrated with some new growth, small portions only of the real kidney substance being distinguishable from the neoplasm, as darker stripes, here and there. In fact, what were at first supposed to be merely enlarged kidneys were in reality masses of new growth retaining the form of the kidneys, and containing the renal substance, or the remnants of the renal substance, interspersed in it. There were several wedge-shaped infarcts, probably due to pressure of the new growth causing obliteration of small arteries. In that case the walls of the cæcum and vermiform appendix, the diaphragm, part of the pericardium, and some of the mesenteric and mediastinal lymphatic glands were found infiltrated in the same way. The affection of the vermiform appendix constituted what might be called a "lymphocytomatous pseudo-appendicitis." By the kindness of Dr. D. Reid, who gave me excellent microphotographs from the sections, I am able to illustrate the microscopical appearances of the kidneys better than I have described them. Fig. 1 shows the renal tissue magnified 30 times, and Fig. 2 represents a small portion of Fig. 1, magnified 100 times. The convoluted tubules and glomeruli are seen widely separated from one another by the round cells of

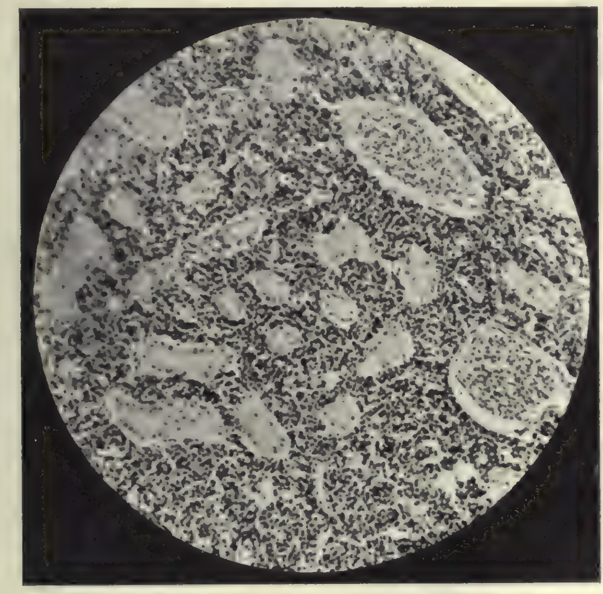

Fig. 2.—A portion of Fig. 1 under higher magnification. (× 100). The renal tubules and glomeruli are seen embedded amongst the round-cells of the new growth.

the new growth. Unfortunately no examination of the child's blood was made.

In connection with the foregoing cases I would allude also to the following ones: In A. D. Fordyce's case (1) of "lymphosarcoma" in a boy, aged 4⅔ years, the kidney showed "an entire separation of tubules and glomeruli from one another by immense numbers of rounded and polyhedral cells." During life the white blood cells were counted at 22,200 to the cubic millimetre of blood. In F. W. Higgs's case (2) of "lymphosarcomatosis" in a child the kidneys were large, "like large white kidneys," and evidently affected throughout with a diffuse neoplasm. The urine showed a cloud of albumin; no blood-count was apparently made. In S. W. Milner's case of "Sarcoma of both kidneys in a child" (3), aged 4¾ years, both kidneys were greatly enlarged and white; "microscopically the growth was a small round-celled sarcoma." The urine showed a thick cloud of albumin. Amongst much foreign literature Felix von Werdt's paper (4) on bilateral diffuse sarcomatosis of the kidneys, associated with a mediastinal tumour, may be specially referred to here. The patient was eleven years old, and the mediastinal tumour appeared to have commenced in the thymus gland. S. Fürstenberg and E. Büchmann (5), in their paper on a case of "sarcomatous degeneration" of the interstitial tissue of both kidneys in a patient, aged 45 years, suggested that their case represented a new group of renal tumours. F. von Werdt (*loc. cit.*) refers to several other foreign papers bearing on the same subject, including an inaugural dissertation by H. Wehland (Tübingen, 1896) on a case of "diffuse bilateral renal sarcoma" and a communication by Banti (6) on "bilateral sarcomatous infiltration of the kidneys." P. Grawitz (7) thought that the tumours described by Banti ought to be regarded as lymphosarcomata. A case of Sterling is likewise quoted from the Polish journal, 'Gazeta Lekarska' (1901), in which diffuse sarcomatosis of the kidneys was associated with diffuse sarcomatosis of the myocardium and prostate. Possibly some cases of bilateral sarcomatosis of the kidneys in animals ought likewise to be mentioned here, for instance, E. Ludwig's case of sarcoma of the liver with bilateral diffuse renal sarcomatosis in a hen (8), and a case of bilateral sarcoma in a wild rabbit recorded by A. E. Boycott and M. S. Pembrey (9).

On the whole subject of lymphocytomatous (especially symmetrical) diffuse permeation of viscera, whether leukæmic or aleukæmic (that is to say, whether associated with a leukæmic blood picture or without one), a recent work by Erich Fabian (10), on the diffuse infiltrating form of leukæmia and lymphosarcoma, is very interesting, and contains numerous references to the foreign literature. The paper is illustrated by a coloured plate representing the macroscopic appearance of diffuse lymphocytic infiltration of the kidney; the organ in that particular case, as in other cases of the same kind, might be almost mistaken for a "large white kidney" of chronic parenchymatous nephritis.

Intimately connected with the present group of cases is the subject of "leucosarcomatosis," a term introduced about 1905 by Carl Sternberg.* In reality the term includes cases of lymphocytomatosis, for it includes all tumour-like (that is to say, sarcoma-like) leukæmic growths, whether the cells of the growth be of the lymphoid or myeloid series, associated with or followed by leukæmic changes in the blood. Cases of chloroma or chlorosarcomatosis constitute a special type of Sternberg's leucosarcomatosis, but a white mediastinal form, in which the mediastinal tumour seems to proceed from the thymus gland, is equally remarkable. Cases of leucosarcomatosis, other than chloroma, may in fact be regarded as cases of chlorosarcomatosis, but without the greenish colour from which chloroma derives its name. In a remarkable case of mediastinal leucosarcomatosis, which I hope soon (jointly with a colleague) to describe elsewhere, the patient, a young man, aged 18 years, whose blood picture was one of lymphocytic leukæmia, had a large mediastinal growth, apparently proceeding from the remains of the thymus gland and covering the outside of the parietal pericardium, like a blanket. A very similar case (in a man, aged 21 years), was described by W. Mager ('Wien. med. Wochenschr.,' 1909, lix, column 1877), and another one (in a man, aged 19 years) has recently been recorded by W. D. O'Kelly ('Dublin Journ. Med. Sci.,' 1914, cxxxvii, p. 409). In all three cases the mediastinal growth was found to be moulded over the parietal pericardium.†

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* In a paper published in 1905 ("Zur Kenntnis des Chloroms" in Ziegler's 'Beiträge zur path. Anat. und zur allg. Path.' (Jena, 1905, xxxvii, pp. 437–454) Sternberg suggested (pp. 453–454) that the term "leucosarcomatosis" (Leukosarkomatose) should be employed for the cases which were formerly regarded as a combination of leukæmia and lymphosarcomatosis.

† *Cf.* also the specimen, No. 2309 b4, amongst Diseases of the Thymus and Thyroid Glands in the Museum of St. Bartholomew's Hospital, London. The specimen is from a girl, aged 5 years, who during life showed signs of acute lymphocytic leukæmia. In the museum description it is described as "sarcoma with lymphæmia," and is obviously an excellent illustration of mediastinal leucosarcomatosis, similar to those I have referred to. The thoracic contents show a tumour apparently growing from the thymus gland and occupying the anterior mediastinum. It lies upon the upper half of the pericardium, which it has infiltrated. The kidneys of the little girl were infiltrated with secondary deposits, consisting of small round cells.

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CONGENITAL HEART DISEASE AND ULCERATIVE SORE THROAT.[*]

By J. D. ROLLESTON, M.D.

A MALE infant, aged 11 months, was admitted to the Grove Hospital on December the 6th, 1914, certified to be suffering from diphtheria, on the eleventh day of disease. The father had always been healthy, but the mother had been an in-patient at the Brompton Hospital on several occasions for rheumatism with cardiac complications.

There were five other children in the family, viz. three boys, aged 20, 17, and 15 years respectively, who were all healthy, and two younger children, a girl, aged 7 years, suffering from deaf-mutism following scarlet fever, and a girl, aged 4 years, who was subject to attacks of sore throat.

The patient had been born at full term, but had been blue from birth and always delicate. The skin had always seemed cold to the touch. Clubbing of the fingers had been noticed since the age of 2 months. He had never cut a tooth.

On admission, the child appeared very ill. There was a membranous deposit on the tonsils, pillars, and uvula, and a profuse nasal discharge. The heart showed some right-sided enlargement; the sounds were clear but rapid. There was a trace of albumin in the urine. Temperature 102·4° F. A large dose of antitoxin was given on admission and on the following day. A few organisms resembling diphtheria bacilli were found in the throat-culture taken on admission, but cocci were predominant, and had entirely replaced the bacilli in a second culture taken three days later. On December the 8th a loud systolic murmur was audible all over the præcordium. Both tonsils showed extensive ulceration, which in the following days spread over the uvula and palate. No Vincent's organisms were found in the throat smear.

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[*] Specimens of the case were shown at the Section for the Study of Disease in Children of the Royal Society of Medicine on January the 22nd, 1915, and are now in the Museum of the Royal College of Surgeons.

On December the 13th stridor and a hoarse cough developed, and there was much difficulty in swallowing. These symptoms persisted, the temperature kept high, and the general condition became worse, until death took place from broncho-pneumonia on December the 19th, the twenty-third day of disease.

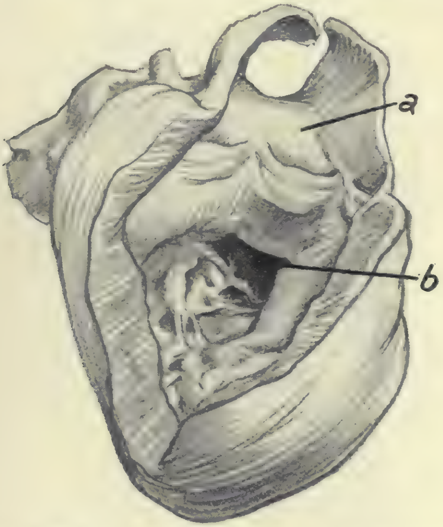

FIG. 1.—*a.* Aorta arising from infundibulum of right ventricle. *b.* Interventricular foramen.

Necropsy (December the 20th).—Superficial ulceration of the tonsils, soft palate, frænum epiglottidis, right arytæno-epiglottidean fold, and deep ulceration of the laryngeal portion of the pharynx on each side, especially on the left, exposing the muscular tissue and eroding the thyroid cartilage. Areas of broncho-pneumonia were found in the lower lobe of the left lung.

The heart showed the following anomalies, for the demonstration of which I am indebted to Prof. Keith:

(1) Transposition of the great arterial stems, the aorta arising

from the infundibulum of the right ventricle and the pulmonary artery from the left ventricle (*v.* Fig. 1). The walls of the right ventricle were considerably hypertrophied, being almost as thick as those of the left. Both ventricles entered into the formation of the apex.

(2) Marked deficiency of the interauricular septum, which was represented by a narrow band 1·5 cm. long by 0·5 cm. broad. The foramen primum lay anterior to it, and posteriorly there was a widely patent foramen ovale (*v.* Fig. 2).

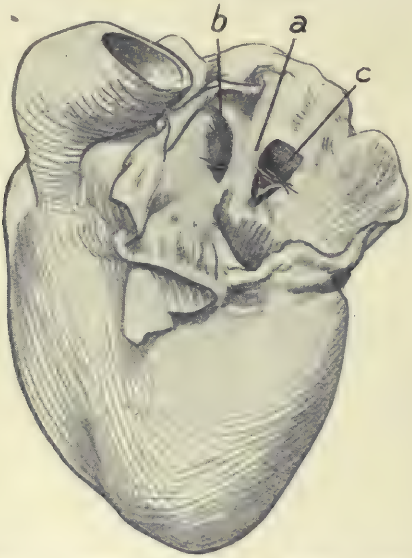

FIG. 2.—*a.* Deficient interauricular septum. *b.* Foramen primum. *c.* Foramen ovale.

(3) An interventricular foramen, 1·2 cm. in diameter in the "undefended space" (*v.* Figs. 1 and 2).

(4) Stenosis and hypoplasia of the pulmonary artery, which had only two cusps (*v.* Fig. 3). No gross changes were found in the other organs.

Of the multiple defects presented by this heart, the most interesting is the transposition of the aorta and pulmonary artery. This condition is one of the rarest congenital cardiac anomalies. Maude Abbott (1), in 1908, collected 44 cases from the literature, but in only 27 of them was the transposition complete as in the present case. Of the remainder 13 were instances of partial and 4 of corrected transposition.

According to Abbott the physical signs of transposition of the aorta and pulmonary artery are not characteristic, and the evidence of concomitant defects, especially patent ductus arteriosus or septal defects, is liable to distract attention from the possibility of so rare a lesion as transposition of the great vessels. In only a few instances has transposition been correctly diagnosed during life.

In the present case the congenital cyanosis, clubbing of the fingers, enlargement of the cardiac dulness, and loud systolic murmur made the diagnosis of pulmonary stenosis certain during life, but the other defects were not recognised ante mortem.

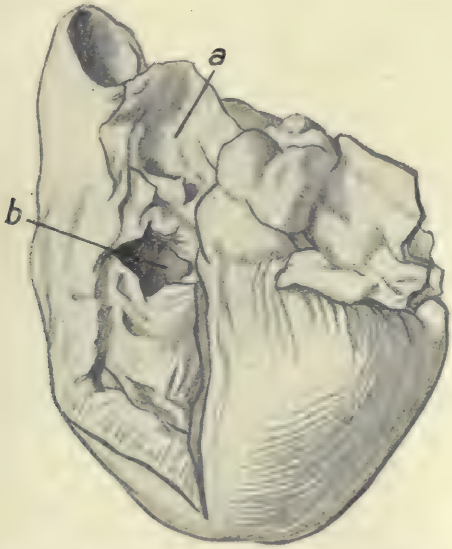

Fig. 3.—*a*. Stenosed pulmonary artery. *b*. Interventricular foramen.

The duration of life in complete transposition of the aorta and pulmonary artery is usually very short. Of Abbott's 27 cases, the three oldest patients were 11 years, 4 years, and 3½ years respectively, while the ages of the remaining 24 ranged between 7 months and a few days.

The prolongation of life in my case is to be attributed to the defects in the auricular and ventricular septa which allowed a free mixture of the arterial and venous blood. It is noteworthy that in only 7 of Abbott's 27 cases was the interventricular septum defective; in the remaining 21 this septum was completely closed.

The family history of the present case is of interest, as it is infrequent to obtain a history of heart disease, congenital or acquired, in one of the parents. In Abbott's series of 412 cases of congenital heart disease, in only 3 was there a history of acquired heart disease in the parents. Although the mother of my case had had rheumatic fever there was no history of her having suffered from it during pregnancy.

In George Carpenter's (2) series of 100 personal cases of congenital heart disease in only a few instances was there a history of rheumatic fever in the parents, but in no case was there any evidence of maternal rheumatic fever taking place during pregnancy.

How far maternal infections play a part in the causation of congenital heart disease is still uncertain, but it is only comparatively rarely that a history of rheumatic fever, typhoid, influenza, pneumonia, tuberculosis, syphilis, and other infections in the mother can be elicited.

It is now generally held that the frequency of fœtal endocarditis in the causation of congenital heart disease has been considerably over-estimated, and there is now a tendency to attribute the majority of cardiac anomalies to developmental errors due to the same causes as the other deformities with which they are occasionally associated. Thus 14 cases of malformation of the heart were found by Keith (4) among 23 human fœtuses and infants who displayed the following deformities: anencephaly, hydrocephalus, spina bifida, umbilical hernia, atresia ani, cleft palate, hare-lip, and stenosis of the œsophagus.

The exaggeration of the frequency of fœtal endocarditis is probably due to the fact that congenital cardiac defects, especially pulmonary stenosis, are specially liable to endocarditis in early life.

The present case is no exception to the general rule that the subjects of congenital heart disease are very liable to succumb to acute infections. With regard to the nature of the infection, it was not diphtheria, although a few organisms morphologically resembling Klebs-Loeffler bacilli were present.

It should rather be regarded as an instance of ulcerative sore throat or pseudo-diphtheria, in which, as Goodall (3) has shown, rods resembling Klebs-Loeffler bacilli are occasionally found, though the clinical appearances differ from those of true diphtheria. I have previously recorded another example of ulcerative sore throat in which, as in the present case, the fauces, pharynx, and larynx were involved, death being due to sudden and profuse hæmorrhage from erosion of a vessel probably situated in the laryngeal portion of the pharynx (5).

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Abstracts from Current Literature.

Diseases of Ductless Glands.

The relation between suprarenals, thymus, and pancreas in children ('*Riv. di Clin. Pediat.*,' 1914, XII, *p.* 681).—**L. M. Spolverini** draws attention to recent studies in glands with internal secretion which afford evidence of the existence of two antagonistic systems—(*a*) the hypertensive (pituitary, thyroid, suprarenals); (*b*) the hypotensive (pineal, thymus, parathyroid, pancreas, genital organs). The functions of the various glands of the two systems do not act in an isolated manner, but close relations exist between them. The glands of most interest are the suprarenal, and, on the other hand, the thymus is of the more importance in infancy, hence it is essential to study the possible anatomo-physiological relations of these two glands in children of various ages dying of various diseases, in view of the functional antagonism between them. As the hypotensive action of pancreatic extract is one of the most active of these endocrinic glands, while the pancreas is functionally active from the first day of life, it appeared to the author opportune to extend his researches to the relations of the pancreas with the suprarenals. These researches dealt with the weight of the three glands, investigations as to adrenalin, and microscopic appearances. Comparing the weight of the two suprarenals, the fact became evident that, out of fifty-one cases, in eight only was the right heavier than the left; besides, the conjoint weight showed small variations from 1·90, 2·10, 2·30 grm. per capsule in both children three days old and eight years. The weight of the thymus varied from a minimum of 0·85 gr. in an infant of three months to a maximum of 12 gr. in one of three days. The weight of the pancreas varied from a minimum of 4·40 gr. in a child of fifteen months to a maximum of 39 gr. in one of twelve months. It was not found that any ponderal relation existed between thymus and pancreas on the one hand and suprarenal on the other; in some cases, however, the weight of the three glands was very low in each, or else that of the suprarenal and pancreas was high and that of the thymus relatively low. The comparison of the weight of these glands did not therefore give any definite results. With regard to the relation between the weight of these glands and the body-weight, that of the suprarenals was proportionate to that of the body. This was not the case, however, with the thymus and pancreas, which in most instances weighed less than the normal, both in an absolute sense and relatively to the body-weight, not *pari passu*, since in some cases the thymus was deficient while at the same time the pancreas was almost normal, and *vice versâ*. The thymus was the organ most at variance with the total body-weight. Estimation of adrenalin gave positive results only in seven cases out of the fifty-one. Hence in a large majority of cases there is no adrenalin secreted in the suprarenals of infants. There was no relation between the weight of the glands and the presence or absence of adrenalin. The characteristic reaction of adrenalin was most strongly positive in a child, aged 4 years, who died unexpectedly from an acute infection, and less intense in another child, aged 3 months, suffering from syphilis, who also died unexpectedly. The reaction was most frequently positive in children who had died of acute infection. A strongly negative reaction was met with in normal children with tubercular or syphilitic infection, although the weight of the glands was normal. Microscopic investigation revealed nothing noteworthy. VINCENT DICKINSON.

Pineal gland insufficiency in children (*'Riv. di Clin. Pediat.,'* 1914, XII, *p.* 848).—**L. M. Spolverini** records the case of a girl, aged 8 years, with precocious development of the external genitals, and growth of pubic hair in contrast with undeveloped intellect. Menstruation was absent, the mammæ enormously developed, while the limbs remained small. There was considerable adipose tissue, which is unusual in pineal insufficiency, wasting and cachexia being the rule. Radiography of the skull showed disappearance of the sagittal and coronal sutures, and marked tendency to general hyperostosis of the base of the skull; the lambdoid suture was intact. The osseous crests were wavy, especially in correspondence with the ethmoidal plane, and on the internal surface of the frontal were digitiform impressions having a tree-like appearance and which corresponded with the convolutions of the anterior cerebral lobes. The direction of the occipital foramen was nearer than normal to the horizontal plane, so that a prolongation of the opistho-basilar line descended more towards the alveolar margin. The sinuses were small and some obliterated, the sphenoid sinus also was small. There was but slight hollowing of the region of the sella turcica, which was small; the middle cerebral fossa was deeper than normal. The whole skull approached the oxycephalic type. VINCENT DICKINSON.

Clinical and metabolic studies of a case of hypopituitarism (*'Amer. Journ. Med. Sci.,'* 1913, CXLVI, *p.* 731).—**De W. Stetten** and **J. Rosenbloom** describe a very marked case of hypopituitarism with infantilism of the Froehlich type. At 10 years of age the patient was noticed not to be growing properly. Up to this time he had suffered from enuresis, which ceased the next year. Then headaches developed with gradual failure of sight from a progressive bitemporal hemianopsia. At the age of 22 years he was practically blind. His development was infantile with no secondary sexual development. An operation was performed by the infranasal sublabial transphenoidal approach, and a cyst was opened which contained about an ounce of fluid. As the result of this, coupled with the administration of desiccated pituitary substance (anterior lobe), the patient became free from headache, more alert mentally, but showed no improvement in sight or growth. Metabolic studies were made on the patient while in hospital after the operation, no pituitary substance being given at the time. It was found that on a fixed diet there was a high percentage of neutral sulphur and undetermined nitrogen in the urine. REGINALD MILLER.

Recent studies on the involution of the thymus (*'Riv. di Clin. Pediat.,'* 1914, XII, *p.* 529).—**G. Rovere.**—Involution may be (*a*) natural or (*b*) accidental from chronic hypo-alimentation, acute fasting, the action of X rays, after vaccination and diseases. The thymus attains its maximum development about puberty; it never entirely disappears, but may retain its function even in advanced years. Physiological involution begins at puberty and is not due, as many have asserted, to increase of connective tissue, but to a gradual and rapid atrophy of the parenchyma. Histologically, signs of reaction are not observed such as would suggest ultimate inflammation or necrosis; with the diminution of lymphocytes there is fatty degeneration of the reticulum, at first localised in the cortex and subsequently extending to the whole parenchyma. In accidental involution from diseases there is hardly any formation of fat, but of connective tissue of a marked sclerotic type derived partly from interstitial tissue and partly from the adventitious tissue of the intra-parenchymatous vessels. Involution due to fasting takes place solely by diminution of the specific elements. The behaviour, therefore, of the connective tissue is a criterion of great importance for the differentiation of the various forms of involution. VINCENT DICKINSON.

A case of enlarged thymus and atelectasis (*'Lancet,'* 1915, I, *p* 72).—**J. C. McWalter.**—An infant, aged 3 months, was found dead in bed. At the post-mortem examination the body was found to be well nourished, weighing 12½ lb. There was uncurdled milk still present in the stomach, and all the organs appeared to be healthy, but the thymus seemed enlarged —being bigger than the heart—whilst both lungs were of a somewhat purplish and collapsed atelectasoid condition. In the author's opinion the case seemed to show a connection between an enlarged thymus and an undeveloped shrunken condition of both lungs—almost atelectasis.

J. ALLAN.

The employment of skiagraphy in the diagnosis of the thymus gland (*'Med. Record,'* 1914, LXXXVI, *p.* 665).—**D. B. Delavan** believes that in any suspected case of enlarged thymus the X rays should be used for diagnostic purposes before any operation is undertaken.

F. R. B. ATKINSON.

A case of hypernephroma (*'Arch. of Ped.,'* 1914, XXXI, *p.* 844).—**L. Fischer** reports a case in a youth, aged 19 years. The symptoms were persistent hæmatoma and pain in the left lumbo-dorsal region followed by a swelling over the ninth intercostal space. The tumour was excised and proved to be a hypernephroma. Metastatic growths subsequently developed in the left scapula and left femur and liver, and death took place. A necropsy does not seem to have been performed. J. D. ROLLESTON.

Adrenal precocity (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, *p.* 2286).—**J. F. Baldwin** reports a case of precocious development due to hypernephroma of the adrenal cortex. The patient was a boy, aged nearly 6 years. He commenced to talk and walk at nine months, and at ten months could talk and run well. Sexual development commenced when he was about eighteen months old, and at three years there was hair on the pubes and face, and his voice was like that of a man. When about five his abdomen began to increase rapidly in size, and though his height and weight were about normal for his years, his facial expression seemed to be that of a man of thirty-five or forty. The genital organs were apparently those of an adult, except that the testicles were small and not completely descended. Mentally his condition was that of a child. Death soon ensued, and at the necropsy a large hypernephroma was found involving the left suprarenal cortex, while in the right adrenal a similar condition was commencing. The left kidney showed a chronic parenchymatous nephritis. The pituitary body, the pineal gland, and also the thyroid and parathyroid bodies were normal. T. R. Whipham.

Precocious maturity in girls (*'Arch. of Ped.,'* 1915, xxxii, *p.* 1).—**F. Beekman** records a case in a girl, aged 6½ years. The family history was negative, and nothing abnormal was noticed in the child till the age of 4 years, when she began to have peculiar laughing spells. Soon after her breasts became prominent, and she began to bleed from the vagina periodically. Sometimes only a month elapsed between her periods, at other times several months. At the age of 6 years her bodily development was that of a young woman of 16. The X rays showed a large sella turcica, well-developed sinuses, and advanced ossification of the elbow, wrist, hand, ankle, and foot. The external genitalia were well developed, and the pubes was covered with long black hair. The heart, lungs, liver, and spleen were apparently normal, and neither kidney could be palpated. By bimanual examination the uterus seemed larger than would be expected at her age.

J. D. Rolleston.

Metrorrhagia at puberty (*'New York State Journ. Med.,'* 1914, xiv, *p.* 432).—**H. C. Coe** records two cases of metrorrhagia at puberty, and discusses the ætiology, pathology, prognosis, and treatment of this disease.

J. Allan.

Diseases of Muscles.

Amyotonia congenita (*'Psychiatr. en Neurol. Blad.,'* 1914, *Nos.* 4 and 5).—**B. Brouwer** and **J. C. Schippers** regard this condition, which was first described by Oppenheim in 1900, as a separate clinical entity. It does not depend on a developmental aura, but on disease. It is neither a neuritis nor a poliomyelitis, but an intra-uterine systemic disease, which affects the peripheral motor neuron exclusively to a varying extent. The writers review the literature and record a personal case in a boy, aged 4½ years, who had had flaccid paralysis of the muscles since birth. Slight improvement, however, had taken place since then. There was marked hypotonus in all the joints. Circumscribed atrophy was not observed. The tendon reflexes were lost. Electrical excitability of the muscles was diminished without RD. The intelligence, sensibility, and special senses were not affected. The autopsy showed marked atrophy of the muscles with increase of connective tissue and fat, disappearance of the myelin in the anterior roots of the spinal cord, and considerable diminution in the number of the anterior cornual cells. The other systems were intact, and there was no change in the central nervous system to indicate arrest of development or disease.

J. D. Rolleston.

Myatonia congenita of Oppenheim (*'Am. Journ. Dis. Child.,'* 1914, viii, *p.* 298).—**A. Strauch** describes a case in a female baby, aged 3 months, presenting some interesting and unusual features. Unlike the usual run of cases the facial nerves were involved. The infant could move at birth, but complete paralysis set in during the third week. All extremities were immobile with the exception of slight movement in ankles, toes, and fingers. The intercostals were paralysed, but the diaphragm contracted powerfully.

The respirations were 70–80 per minute. The tissues of the upper limbs were markedly flaccid so that the muscles were not distinguishable from the overlying tissues. The lower limbs were full and rounded, and there was no atrophy. The muscles of the face acted with appreciable slowness. The eyes followed a light, but there was horizontal nystagmus. The pupils reacted briskly. The reflexes, both superficial and deep, were absent. There was absence of faradic and diminution of galvanic irritability of muscles and nerves. The disease is usually noticed at birth, but it may occur during the first year (Collier and Wilson). The joints are loose, flaccid, and flail-like. The sphincters are normal, and sensibility is very rarely affected. The disease is chronic with a tendency to improvement, first noticed in the upper limbs, which may become normal. Death usually occurs from pneumonia or other form of respiratory disease. The muscles are little developed and lie amongst masses of hyperplastic interfibrillary fat tissue. The muscle fibres show indistinct striation and are very narrow. Congenital hypoplasia of the anterior horn cells has been found by Baudouin, Collier and Holmes. As regards diagnosis, poliomyelitis is excluded by the congenital character of myatonia, absence of febrile and vasomotor phenomena, the absence of atrophy, and the reaction of degeneration. Muscles in poliomyelitis recover in groups, and the stage of repair is much shorter. From polyneuritis it is diagnosed by the absence of changes of sensibility and of affections of the muscles of the heart and pharynx. Progressive muscular atrophy occurs later and shows localised myatrophia. In the Werding-Hoffmann type of spinal atrophy there are steady progress, exact localisation of atrophic process, and degenerative reaction.

CHRISTOPHER ROLLESTON.

Myositis ossificans (juvenile progressive type) ('*Lancet*,' 1914, II, *p.* 1247).—**G. H. Almond.**—The patient, a girl, aged 7 years, was healthy as a baby. Fifteen months ago, when aged 5½, her right hip began to get stiff, and was followed by the left; the stiffness was intermittent at first, but they had gradually become more fixed. Present condition: can only walk about 100 yards, and tilts her pelvis up on both sides with each step. Child thin; muscles badly developed; slight list of the spine to the left with corresponding curves and raising of the right shoulder. A small patch of ossification can be felt close to the insertion of the biceps of the left arm, and a patch of hardness near the origin of the biceps of the right; ilio-tibial band on left side ossified from its origin to its insertion; hamstrings of left thigh ossified, a skiagram giving the appearance of a calcified shell enclosing the muscles; lozenge-shaped patch of hardness in the outer belly of left gastrocnemius; no definite patches of hardness or ossification made out in the muscles of the spine or trunk. J. ALLAN.

Myositis ossificans following a single trauma ('*Journ. Amer. Med. Assoc.*,' 1914, LXIII, *p.* 1452).—**P. Oliver** reports two cases of myositis ossificans following a single injury. One was a man, aged 35 years, and the other a girl, aged 12 years, who came complaining of pain and disability of the left elbow. Six weeks previously she had fallen, striking the forearm. A posterior dislocation of both bones of the forearm was diagnosed and reduced. Rest for a week was followed by massage and motion. After a few weeks, disability became more marked. On examination, a hard mass in the flexure of the left elbow was felt. The forearm could be flexed to 100°, and extension also showed some limitation. The Röntgen rays revealed a shadow extending into the musculature of the arm, attached at its lower end to the tip of the coronoid process. It consisted of two distinct parts, the lower about the size of the radial head and the same density. The upper part was pointed, irregular, and attached to the lower by a narrow stem. There was also noted ossification in the periarticular structures and beneath the raised periosteum on the outer side of the humerus, and also an incomplete fracture of the external epicondyle. About four months after the injury a piece of cancellous bone was removed from the coronoid process, and with it a part of the brachialis anticus muscle. The growth involved the tendon and the body of the muscle. Four years later the patient complained of no disability, being able to work as a stenographer. Flexion was limited to 95° and extension only slightly. Just internal to the biceps tendon was felt a knob of bone firmly attached to the coronoid process. A corresponding mass was heaped up on the anterior surface of the humerus. Thickening about the condyles and a slight elevation at ulnar tubercle, besides a separate piece in the capsular structures, were apparent in the röntgenogram. T. R. Whipham.

Dystonia musculorum deformans (‘*Med. Record*,’ 1914, lxxxvi, *p.* 1000).—**H. Climenko** describes a case similar to those recorded by Oppenheim under this title in 1911. Other observers have given the condition other names: “tonic torsion neurosis,” “general tic, with tonic changes,” “tortipelvis,” “progressive torsion spasm,” opinions differing as to whether the condition is organic or functional. It is a chronic progressive disease of later childhood, hitherto only described in Russian or Galician Jews. Sex and heredity are of no importance. The earliest symptom is usually that of partial or total loss of function in one or more extremities, usually the lower, due to improper tonus innervation. As a result a very peculiar form of disordered gait develops, in which there is much torsion of the trunk on the pelvis. The movements of the affected parts are jerky and spasmodic, but not truly athetotic. There is a peculiar mixture of hyper- and hypotonus in the muscles of the affected limbs, which is characteristic. The face escapes. The deformities of the trunk (scoliosis, twisting of the pelvis, and lordosis) disappear in the recumbent attitude. Talipes may persist. The mental condition is usually normal. Reginald Miller.

Orthopaedics.

Hibbs’ osteoplastic operation for Potts’ disease (‘*Journ. Amer. Med. Assoc.*,’ 1915, lxiv, *p.* 398).—**B. P. Farrell.**—In performing the operation, a longitudinal incision is made directly over the spinous processes, through skin, supra-spinous ligament and periosteum, to the tips of the spinous processes. The periosteum is split over both the upper and lower borders of the spinous processes and the laminæ, and stripped back from them to the base of the transverse processes. The spinous processes are then transposed after partial fracture, so that they make contact with fresh bone, the base of each with its own base, and the tips with the base of the next below. The adjacent edges of the laminæ being absolutely free from periosteum, a small piece of bone is elevated from the edge of the laminæ and placed across the space between them, its free end in contact with the bare bone of the laminæ next below it. The lateral articulations are exposed and the cartilage is removed by a very small curette. This adds to the extent of the fusion. The lateral walls of periosteum and the split supra-spinous ligament are brought together over these processes by interrupted chromic catgut sutures. The skin wound is closed by silk, and a steel brace applied. Of 158 patients operated upon, seven have died, the cause of death in each instance being extrinsic and not due to the operation, and four have required re-operation. With these exceptions, the results have been eminently satisfactory, inasmuch as, barring three who were paralysed when they came to the hospital, all the symptoms of Pott's disease other than the deformity have disappeared; all the patients who have been operated on for a longer period than one year are without apparatus, and are able to carry on the ordinary avocations of life, whether play or business.

T. R. WHIPHAM.

Bone transplantation (Albee method) for the cure of tuberculous spine disease ('*Journ. Amer. Med. Assoc.*,' 1915, LXIV, *p.* 400).—**C. M. Jacobs** gives details of nine cases operated upon, and considers that surgical measures for tuberculous spine disease are a great advance over conservative treatment, but should be restricted to selected cases. Undoubtedly they shorten the period of disability. Not only may existing deformity be prevented from becoming exaggerated, but also deformity itself may be prevented by surgical measures. Too early reliance cannot be placed on the strength of the bone graft. It takes time for the splint to become securely fixed by permanent callus. External support must not be disregarded for many months following the operation, otherwise deformity may ultimately occur. Even with post-operative protective treatment for a period of six or more months, the duration of treatment is much shorter than the average duration under non-operative methods. Success of bone transplantation for the cure of tuberculous spine disease depends on the proper implantation of the bone splint into the diseased and normal contiguous vertebræ. Essential to the success is the *careful protective after-treatment* for a period of months.

T. R. WHIPHAM.

Pott's paralysis: restoration by Albee's operation ('*New York Med. Journ.*,' 1914, C, *p.* 174).—**A. J. Davidson.**—The operation performed on a child 5 years of age was as follows: An incision was made over the spinous processes from the ninth dorsal to the fourth lumbar. The spinous processes of the tenth, eleventh, and twelfth dorsal, and first, second, and third lumbar vertebræ were divided into halves, and the interspinous ligaments were also divided; into the cavity a graft of 5 in. long and 1 in. wide and $\frac{1}{4}$ in. thick from the left tibia was inserted. Recovery was complete. The paralysis disappeared. A similar operation, with equal success, was performed on a child, aged 11 years.

F. R. B. ATKINSON.

The mechanics of a plaster-of-Paris cast in fixed lateral curvature of the spine ('*Journ. Amer. Med. Assoc.*,' 1914, LXIII, *p.* 2119).—**E. G. Abbott** gives detailed instructions as to the correction of deformities in cases of lateral curvature by means of straps and the proper adjustment of plaster-of-Paris jackets by the insertion of pads in correct anatomical positions.

T. R. WHIPHAM.

Recurrent spondylolisthesis with paralysis: bone-splint transplantation ('*Journ. Amer. Med. Assoc.*,' 1915, LXIV, *p.* 24).—**E. W. Ryerson.**—In the latter part of February, 1913, a strong and healthy girl, aged 15 years, was carrying another girl in her arms when she suddenly felt a pain in her back and fell to the floor in a faint. When she awoke there was a severe pain in the lower part of her back, but after a time, with some assistance, she was able to walk home. For a week the pain continued, though less severe, and she was able to go to school, but on the eighth day her legs grew weak and began to feel numb. A week later she was unable to walk at all, and pain radiated down the back of the thighs and legs. The knee-jerks were increased, a slight ankle clonus was present, and the condition was one of spastic paraplegia. It was thought that possibly a vertebral tuberculosis might be present, with pressure on the cord. A double Buck's extension was applied to relieve the painful flexion of the knees. In a few days the paralysis had disappeared, and the child was sent to hospital to have an artificial ankylosis of the vertebræ made by the Albee method. On examination, however, no evidence of spinal tuberculosis could be found, and it seemed probable that the condition was due to a mechanical cause. An actual forward displacement of the fifth lumbar was not considered as likely as a protrusion of the intervertebral disc, although no history of a sideways bending at the time of the accident could be elicited. The patient, after a week of observation, was allowed to go home, in the belief that the trouble would not recur without severe exertion. She was cautioned to avoid lifting any weights and to keep quiet for some weeks. For a week at home she remained well, but the next day she stumbled over some obstacle on the floor and the paralysis recurred. The Buck's extension once more rapidly relieved the paralysis, and a plaster jacket was applied, fitting very low over the hips. A few days later an attack of ptomaine poisoning occurred, and the jacket was removed by the family physician on account of the distention of the abdomen. Now began a series of attacks of paralysis, averaging one every ten days until January, 1914. A small and inefficient commercial brace had been applied some time before, but it did no good. In February no paralysis existed, and the reflexes were normal. On bending her backward in bed, exaggerating the lumbar lordosis, the spinous process of the fifth lumbar vertebra could be felt to move forward abnormally far on the sacrum. This caused pain in the back and a tingling and pricking sensation in the feet. On bending the body forward, obliterating the lumbar lordosis, immediate relief was felt, and the child stated that this occurred habitually on similar movements. On March 11 a splint was cut from the left tibia, curved slightly to fit the lumbar lordosis and the sacrum, and long enough to reach from the third lumbar process to the third sacral. The lumbar and first two sacral spinous processes were readily split, but the third sacral was merely a small projection, so a groove was cut out bodily in this region. The splint was sewed in with braided silk sutures, which were inserted deeply and tied very tightly. A layer of the lumbo-sacral fascia was sewed over the whole splint, covering both splint and silk sutures. The girl was placed in an ordinary bed and kept recumbent for three weeks, when against orders she began to sit up when the nurse was out of the room. April 7 she went home, and April 21 began to walk about. Her back felt perfectly strong until June 4, when something gave way, causing severe pain but no paralysis. Examination showed that the upper tip of the splint had become loosened from the third lumbar spinous process. The knee-jerks were normal, there was no ankle clonus and sensation and motion were undisturbed. There was crepitus at the tip of the splint when the back was moved, and the pain was said to be quite severe on such motion. Later the upper end of the splint was firmly reattached by drilling both splint and third lumbar spinous process and tying with silk. She is now sitting up in a plaster jacket without any symptoms referable to the original difficulty. The spine seems strong and the splint is apparently firmly fixed.

T. R. Whipham.

A case of rotary dislocation of the atlas ('*Boston Med. and Surg. Journ.*,' 1914, clxxi, *p.* 822).—**J. J. Morton.**—The boy was aged 12 years, and the dislocation was successfully reduced.

F. R. B. Atkinson.

Two cases treated by rib transplantation ('*Med. Press*,' 1915, i, *p.* 192).—**W. I. de C. Wheeler.**—The first case was that of a child, aged 4 years, suffering from congenital dislocation of the hip, which was unsuccessfully treated by Lorenz's method. The upper and posterior rim of the acetabulum was freely exposed, and the bone in the region freshened by light touches of a gouge and chisel. A finger length of one of the upper ribs was removed in a position where the curve seemed suitable for reinforcing and deepening the posterior portion of the acetabulum. Before reduction of the dislocation three single sutures of fine aluminium bronze wire were passed through the bone in the required position with a strong fully curved needle. The head of the bone was then levered into place and the rib fixed with its centre at the point where the head of the bone appeared to escape most easily from the socket. The second case treated in this way was one of ever-increasing kyphosis in the mid-dorsal region of the spine.

J. Allan.

Coxa vara ('*Journ. Amer. Med. Assoc.*,' 1915, lxiv, *p.* 219).—**J. Ridlon** states that it is true that most cases of coxa vara appear about the period of adolescence, but since all cases do not appear at this time, and since it has not been shown that the adolescent period is an ætiological factor, it is best to avoid any such description of the condition. In the same way a history of injury is by no means always found in these cases. The author has observed two instances in which coxa vara was bilateral. In neither were the hips attacked at or near the same time, and in neither case was there any knowledge of injury. Coxa vara should be distinguished from fracture of the neck of the femur in children and adolescents. Boys are the most frequently affected, and often are fat and of the feminine type with undeveloped sexual organs.

T. R. Whipham.

Coxa vara adolescentium traumatica ('*Journ. Amer. Med. Assoc.*,' 1915, lxiv, *p.* 216).—**A. Steindler** finds that after an injury between the ages of nine and sixteen, epiphyseal separation at the upper end of the femur is not only possible but highly probable to occur, with or without pre-existing or co-existing rickets, and to be followed by a deformity known as coxa vara adolescentium. The producing trauma may be, and very often is, so slight as to fail to impress the observer with its significant connection. Nevertheless, minor injuries, and especially repeated ones, are perfectly capable of producing the separation. Static influence, too, is a continuous strain. The late establishment of the deformity, after strain or injury have ceased to assert themselves, offers a striking analogy to the post-traumatic kyphosis of Kuemmel, especially since so-called molecular necrosis of detached bone and cartilage have been found microscopically in cases of traumatic coxa vara adolescentium. The loss of function in these cases is never absolute or immediate, except in cases of great violence or injury. In fact, in most cases there is a period of functional integrity, the impairment following later and slowly, according to the progress of the deformity. The histories of ten illustrative cases are given. T. R. WHIPHAM.

Separation of the epiphysis of the small trochanter of the femur (*'Journ. Amer. Med. Assoc.,'* 1915, LXIV, *p.* 1234).—**C. R. Metcalf** reports two instances of this rarely reported injury. One occurred in a boy, aged 17 years, while playing hockey, and the other in a lad, aged 16 years, during a game of football. Both patients made a good recovery.

T. R. WHIPHAM.

Two cases of Schlatter's sprain (*'Practitioner,'* 1914, XCIII, *p.* 146).—**R. Connell** describes two cases in boys of 17 years of age, caused in each instance while exercising at the vaulting-horse.

F. R. B. ATKINSON.

Review.

EXPOSÉ DES TRAVAUX SCIENTIFIQUES DE J. BABINSKI. Paris: Masson et Cie., 1913. Pp. 229.

THE author gives a short digest of his work in all the fields of neurology which he has enriched by his labours. Not more striking than the pioneer character of much of the work is its wide range. In these pages is discussed practically every aspect of organic and functional disease of the nervous system.

By far the most important part of Babinski's work is purely clinical, and consists in the discovery and elaboration of physical signs, some of which form the criteria in the differentiation of organic from functional nervous disease.

The volume contains a *résumé* of his views on the tendon reflexes and on the still more interesting cutaneous reflexes. It is interesting to note that Babinski still includes "le signe de Babinski," the extensor response of English neurologists, among the latter, although recent work by Marie and Foix and many others has shown that it is by no means purely cutaneous, but can be elicited by stimuli applied to deep structures.

Dealing with contracture, he points out that the flexed condition of the legs in many cases of spastic paraplegia, constitutes an example of a clinical type as definite as the extended form of spastic paralysis, and "paraplégie en flexion" cannot be dismissed as merely differing from "paraplégie en extension" in the presence in the former of contracture. It is not possible within the limits of a short review to go into the characteristics of each type, but it may be remarked that the causative lesion in each instance has certain characters confirming the hypothesis that the conditions are definitely separable.

The concluding chapters are devoted to Babinski's views on hysteria, which do not need mention here. F. M. R. W.

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Original Articles.

THE EDUCATION OF CHILDREN WITH DEFECTIVE VISION.*

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(*Continued from p.* 268.)

AFTER consideration and experiment the following scheme of work for various grades of boys and girls has been drawn up. Since boys and girls are educated together in these classes, for the most part they take the same kinds of work, and there is no special difficulty arising out of the arrangement, for the teaching is much more individual in the small classes of the myopes than can be provided in the larger classes of the normal school.

CLASSIFICATION.

For general convenience the children can be considered in three groups, according to age and attainments: (I) Standards 1 and 2, for those aged 7 to 10; (II) standards 3 to 6, for those aged 10 to 13; (III) standard 7, for those aged 13 and 14. It will be understood that there is considerable interchange in the grouping, as individual children excel in one or other forms of work.

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* A paper read before the Ophthalmological Section of the Royal Society of Medicine on March the 3rd, 1915.

Handicraft has value in two directions. The first and most obvious is that of the training of the "hand and eye" in the doing of useful work. That is the purely utilitarian aspect of the work, and it is the one that becomes the more evident in the higher standards. The second line of value is one of association; with the doing of some particular form of work it is possible to attach lessons in history, arithmetic, and language. This association is the more easily developed with the work of the younger children, and it is of particular value to them. For brevity's sake the first line of value will be described as utilitarian, and the second as the expressional, since the children are taught to express some idea in concrete form.

GROUP I: STANDARDS 1 AND 2, AGES 7 TO 10.

(A) *Bead work.*—Stringing large beads is one of the earliest pieces of work to be taught. Later simple designs are worked, and finally fancy blinds for windows made. Besides the actual practice of the work there are attached lessons in arithmetic. Children readily learn to thread beads with very little examination by the eyes provided the beads are of sufficient size.

(B) *Paper folding, cutting, and modelling.*—In this work stiff paper is used, the children are taught to fold it into certain lines, then to cut out various squares, and finally to set up the remaining portion into the form of some common object. The folding is an aid to the teaching of arithmetic, so is the cutting, and finally the object itself is a peg on which to attach an "object lesson"—*e. g.*, a piece of brown paper 12 in. square is given to each child. (1) The edges are measured and compared. The sum of the measurements of the edges is found. The inches are then taken as feet, and the cost of binding the several edges found. The same for the measure in yards. Then the inches are taken as miles and the cost of travelling such a distance calculated. (2) The children fold bottom edge to top edge and compare sides (halves). (3) They fold into quarters and measure new distance round (quarter area). (4) They fold into eighths and repeat exercises. (5) Into sixteenths. (6) Calculate the cost of paper of several areas got by folding. (7) Bend over the folded paper, tuck in sides, gum them, and a model barn is produced. (8) The children find the length, breadth, height, and distance from one side over the roof to the other. A great number of simple articles are made in this fashion, and with each is associated an "object lesson," these lessons are therefore truly expressional, some idea is worked out in each. The following is a list of objects made by one of the classes: Trays of various shapes for trinkets, buttons, pens, silkworms; cases for pocket combs, buttonhooks, needles, hatpins, cards, stamps and spectacles; frames for pictures and photographs, of various shapes and folding; boxes, with lids, and sliding; hanging spillholders, triangular, square, hexagonal, and wall tidies for hair, etc.; purse; doll's house, scissors sheath, book case, blotter, fire screen, plant pot holders. Paper weaving, for the purpose of making small mats and book marks, was formerly practised, but this has been stopped. Too much close attention of the eyes was required, and there was no expressional value in the work.

(C) *Modelling in clay and plasticine.*—This is a very favourite form of work with all children, and it is capable of unlimited expansion, both as a simple handicraft practice and in expressional work. Further, it is admirably adapted for the cultivation of the individual powers of the children. No eyestrain is involved, for the mass of material with which the work is done is large; there is no desire to bring it close to the eyes, for the size of the detail will be determined by the sight of the child, so stooping is not fostered. It is possible to associate this work with lessons in arithmetic and general history.

(D) *Toy making.*—With the aid of such simple materials as old matchboxes, corks, sticks, and wool, a large variety of toys are made. In this fashion the children are able to produce in a material of somewhat more stable character the work of modelling. The toys are kept by the little ones and taken home, to the interest of the parents. Use is also made of the different forms of prepared wooden strips for the building up of toys, such as the "interlocking building blocks"—these are of value in dull and cold weather; with them models can be built up easily when the light is poor and hands are cold.

(E) *Drawing.*—With all the foregoing work there is associated drawing on the blackboards, or on large paper sheets in chalks. This drawing is systematic with a view to the introduction of design, and is preparatory to some of the modelling tasks, and the more especially introductory to the bent iron work of the succeeding standards. Free drawing on the boards is encouraged, and some of the children develop considerable skill in picture production. In one of the schools the influence of the teachers in this direction is marked by the high grade of really artistic work done by the children. All this work is done on a large scale, an ordinary drawing taking a space of 20 in. by 30 in., that is the full range of the child's arm. No small scale drawing such as is common in the normal schools is permitted. The children readily fall in with the habit of drawing in this fashion, and the work is always done standing.

(F) *Other handicraft work of purely utilitarian character.*—Knitting is begun. In this care is taken to foster the habit of working without looking at the work; if the child shows no ability to do this then the work is stopped. The work done includes plain knitting, casting on and off, the making of dusters, kettleholders, babies' hats, reins, whips, and rattles. String bag making is begun, also cane weaving and raffia winding, in the making of articles such as frames, mats, napkin rings, etc. Silk and linen fraying for the making of book markers has been tried, but abandoned, for it required continual attention of the eyes in the selection of fine strands of material; further it is said that the practice fosters a tendency to destructiveness.

GROUP II: STANDARDS 3 TO 6, AGED 10 TO 13.

Following the order of work for the previous group marked A to E.

(A) *Bead work* is practically stopped, for its educational value is small. Some few girls, however, carry on with it for the making of Japanese window screens. The fine bead work for making bags, etc., is necessarily barred.

(B) *Paper work.*—This gives place to cardboard modelling, in association with lessons in arithmetic, language, etc. Similar articles to those made in paper are now made in cardboard.

(C) *Modelling in clay and plasticine* is continued for its expressional value in the teaching of history, geography, etc., and there is a beginning in the use of paper pulp for the production of permanent models.

(D) *Toy making.*—Strip wood work and simple carpentry is begun and developed. The work is of value in the practice of making objects, and also in association with the teaching of arithmetic, *e. g.*, making of a barn according to the example of paper folding is developed, and the model barn is made in wood. Inches are taken as feet, and the barn is measured: Base 20 by 14, height 12, roof 6 by 6. The wood required is measured up, and the cost found at 2*d.* a foot. Cost of paint at 1*d.* a foot. Cost of nails at 3*d.* a lb. A great number of models are made such as ladder, fence, easel, swing, signal, notice-board, frames, drain, garden seat, deck chair and table.

(E) *Drawing.*—The systematic design drawing expands into bent iron work. This is an excellent form of handicraft for the short-sighted. For the most part it can be done with the eyes looking right forward at the work. With a bench or table of a proper height for the child there is no necessity for stooping, such as is involved in the use of carpentry tools. The work has drawbacks in that a good deal of noise is involved, and that in some of the advanced work the children have scarcely sufficient muscular strength to bend the iron unaided. The variety of this work done is as follows: Formation of C and S curves, joining by means of clamping, and by means of rivets, drilling, and fixing rivets. The older children proceed to make such articles as watch stands, calendar stands, flower-pot holders, letter and key racks, photograph easels, flower glass holders, double photograph frames, oval frames, fire screens.

(F) *Utilitarian crafts.*—In these higher standards work that was originally expressional becomes utilitarian, except in so far as the cost of the work can be worked out. Materials cost but little in comparison with the time expended, but this can be assessed and the practice of arithmetic associated with the more attractive handwork. Knitting is continued. Lock knitting is applied to the making of hats, bonnets, muffs, necklets. Plain and purl in various patterns such as ribbing, imitation brioche, dice. Vests, scarves, tea cosies, and jerseys are made. String-bag making is developed. Casting on, passing stitches over, counting rounds, taking work off from frame, casting off, making cords for handle, putting on rings, and fastening off ends are taught and practised. The work does not involve eye-strain when the child shows a capability for it. They are not allowed to hold the work in their laps; it must be placed on the flat-topped myope desk (*v.* Fig. 6). Raffia work is continued in association with cardboard work. It is useful as a mode of cultivating "taste." No raffia weaving or sewing is permitted, for these are far too trying to the eyes. Book-binding of an elementary kind is begun. The children are taught to bind into folios the large printed sheets produced with the rubber-faced types in class work. Mat-making was tried, but stopped. It is a utilitarian work of the dullest and most routine kind, and has no immediate or prospective value for children of this degree of intelligence.

GROUP III.—STANDARD 7, AGED 13 AND 14.

It is in this group that the greatest difficulty is found in providing a sufficiency of good handicraft such as can be done by highly myopic children. Carpentry would be ideal, were it not for the necessary stooping posture and the use of plan drawing and measuring. That prohibits the work for these children in anything like a full development.

Comparing their schedule with that of the former groups:

(A) *Bead work* is stopped.

(B) *Paper folding* is developed on occupational lines; envelope folding, show-card making, and box-making are taught. To some extent, arithmetic lessons can be introduced by calculating the cost of material and time.

(C) *Modelling* is practically confined to the use of paper pulp; this has an educational value in the teaching of geography, and a utilitarian side, as the elder children may be able to produce permanent models for the use of the younger children, and for the blind schools.

(D) *Toy-making* includes all the carpentry these children can undertake; many of them show considerable skill in the work.

(E) *Drawing* and design are developed in the bent iron work. It is proposed to attempt repoussé work, and tin-smith work. Repoussé work, even more than bent iron work, has the disadvantage of the noise involved. Repoussé work as ordinarily done would not be permissible for the highly myopic, since the flat bench and the continual stoop over the work would be injurious. It would, however, be quite practicable for the work to be done on wall benches sloped at the angle of 30° from the perpendicular; the benches would have a 2 or 3 in. ledge on which to support the work and tools; the children would work standing before the wall benches in very much the attitude of the sculptor. Tin-smith work would provide an additional exercise for the cleverer boys, but educationally it is no more than a development of the cardboard modelling.

(F) Knitting is continued by the girls. Bag making is stopped, but cane and basket work is continued. Raffia work is stopped since the full development is prohibited for these children. Book-binding is developed. The girls learn domestic work and simple cookery.

One of the best of the handicrafts for these older children is the printing, to which attention has been drawn. For value in the inculcation of thought, care, exactness, general neatness and cleanliness of work, it is scarcely to be bettered. The materials employed are simple, and the work is variable to the ability of almost every grade of child. The only limitation is the one that confines the use of sticky black pigments to those who can keep themselves clean.

OCCUPATIONS FOR MYOPES.

In the former account of the myope classes some remark was made on the work of these children after school years. The necessary inquiries made by teachers and care committee members as to suitable occupation for leavers has resulted in the drawing up of lists of suitable occupations for boys and girls. It must be understood that this list relates to London conditions only. Two grades of work are shown—those most suitable and those of secondary suitability:

Boys: First selection—Nursery gardening, poultry farming, messengers, assurance agents, travellers and canvassers, rent collectors, hawkers and street traders, shopwork under good conditions, and piano-tuning. Second selection—Stick and pipe mounting, basket-making, and some branches of brush-making.

Girls: First selection—Florists' work, waitresses in tea shops, dairy shops, under nursemaids (no sewing), crêche attendants, helpers at mothers' schools, helpers at special schools and dining centres, and light warehouse work (packing). Second selection—Box-making, cork sorting, envelope folding (cementing and black-bordering), show-card mounting, some branches of brush-making, and stockroom work.

The kinds of work placed in the first and most suitable selection are of the outdoor type, or those that enable the worker to be out and about, standing and moving, and with a minimum of close eye work. These kinds of work are doubly suitable, for the general health is likely to be better for the freedom of movement enjoyed, and with the improvement in the general health the state of the eyes is likely to be benefited. Next come the second selections. All these are light tasks, that do not unduly involve the use of the eyes; but they necessitate sitting and stooping to some extent and therefore are not so good for the body or the eyes. Looked at from the occupational point of view it is evident that the teaching of handicraft in the myope classes is not a direct preparation for life work, such as is understood by the handicrafts of a blind school, rather the work should be regarded as a convenient peg on which to hang general instruction; the work itself is of value as a training in method and habits of precision, and as cultivating satisfactory habits in the use of the eyes. The work is of value also in that it tends to engage the minds of the children with the possibility of creating things and of fostering thought and observation, and to that extent withdrawing them from the fatal snare of living in a world of reading and book-thinking. The manual work is therefore both a discipline and a distraction.

If any comment be needed upon the satisfactory nature of these classes, it could best be found in the steadily increasing interest shown by the ophthalmic surgeons who have to do with the eyes of the elementary school children in the county in which the scheme has been most exploited. There is a steady increase in the number of children referred by the hospital surgeons "for education in a myope class."

A CASE OF EXTRA-GENITAL PRIMARY CHANCRE OF THE WRIST.

By George Pernet, M.D.,
Dermatologist to West London Hospital and Lecturer on Dermatology in the West London Post-Graduate College.

In the course of my professional work I have seen a fair number of extra-genital primary chancres in children, but I do not remember to have ever seen one on the wrist until June of this year, when a case of that kind presented itself in my clinic. Usually in children the original syphilitic sore is about the mouth or lips, the result of that stupid habit of promiscuous kissing of children by relatives and strangers, or of sexual aberrations. In a lecture to graduates at the old Polyclinic (1) I brought together a number of cases, insisting on the strange ways in which syphilis might be accidentally contracted or communicated. That the notion of such accidental infection cannot be brought to mind too often is plainly demonstrated by the fact that extra-genital chancres are still frequently overlooked for one reason or another.

To call such accidental infections cases of *syphilis insontium* is beside the mark, for as medical men we have nothing to do with such questions as the guilt or innocence of a patient when approaching morbid problems.(2) Our business is to make a correct diagnosis and employ suitable treatment in order to cure, or at any rate relieve, the sufferer. I make no apology for insisting on such points of common knowlege. There is much too much tendency on the part of medical men to pose as moral censors and to soar into the transcendental.

That cases of extra-genital chancres should from time to time be published is therefore obviously important, not only from the point of view of early treatment, but also to prevent the spread of the disease to others in the home and out of it.

The present case relates to a lad of 15, who came under observation for a widespread papulo-lenticular rash affecting the face, trunk, and limbs, and quite characteristic of syphilis. In addition there was multiple adenitis and also typical syphilitic ulceration of the throat. The patient was pale and looked ill. There was no headache, a symptom of importance in adult cases, especially in women.(3)

There was no sign of a primary sore about the genitalia, which were carefully examined from the exclusion point of view, for my suspicions whilst examining the patient generally had already fallen on a raised convex lesion, the size of sixpence or so, situated on the radial side of the flexor surface of the right wrist. This was under a simple dressing and was only displayed when that was removed. Here it is well to insist on the removal of dressings when confronted by an early syphilitic rash. Years ago, I learnt the importance of such a step.(4) It was the case of a man, with an undoubted early syphilitic eruption and adenitis, but no trace about the glans or genitalia of a primary sore. But I noticed his left hand was bandaged and on making him remove the dressings, which he did reluctantly, I found an absolutely typical primary chancre of the pulp of the left middle finger, which was being fomented in the casualty department of the hospital under the impression that it was an ordinary whitlow. This is a common mistake in the case of primary sores of the fingers and has been made over and over again. At the time I mentioned this fact in a lecture to the Students' Society. A few days after, one of the house-surgeons, who had been present, informed me he had found and diagnosed a primary chancre of the finger in a casualty case that turned up the very next day to my lecture, and that his diagnosis was the result of my having called his attention to the possibility of such an occurrence. In practice, always have the possibility of syphilis at the back of your mind.

But to return to our wrist primary chancre; the diagnosis was confirmed by the induration and by the fact that the corresponding axillary glands were greatly enlarged *en paquet* and hard, and quite different from the mild degree of adenitis in the opposite axilla. The corresponding epitrochlear gland was not involved. This could be explained, I think, by the fact that the primary chancre was situated on the *radial* side of the wrist. Had it been on the *ulnar* side, then the epitrochlear would have been affected. Nor was the opposite epitrochlear involved, it may be said in passing.

As to the origin of the primary sore, the syphilitic infection had occurred after slight injury to the wrist—a scratch from a piece of wire (molybdenum—the patient was an electric lamp wire drawer)—which had "festered." This had taken place three months before the patient was first seen, when he gave about two weeks as the duration of the rash. Infection had found its way in through the open door subsequently to the occurrence of the original scratch. This points to the importance of attending even to small solutions of continuity in the skin and should be taken to heart by medical men in active practice, especially at such a time as this, for war, as is well known, brings venereal disease in its train.(5)

The only clue as to the origin of the syphilis was the statement that a man with a bad skin rash had lodged in the house. This man I was not able to examine.

The original injury had not been sucked by anyone, a point of some interest, as good Samaritans with mucous plaques of the mouth have infected others in this kind of way.

The lad was given 0·15 of neo-salvarsan, the only small dose available. I took the patient's age into account and did not desire he should have an ordinary dose, especially as the neo-salvarsan available in the hospital at the time was of English make, and according to some writers this make had given rise to severe reaction. In my case, though only 0·15 was injected, the reaction was a smart one, and the temperature went up to 104° F.

It will no doubt be asked, in the stereotyped way, how about the blood? Although there could not be the slightest doubt about the diagnosis of syphilis on clinical grounds, a blood-test was done from the point of view of its interest merely. It was positive. But I should like to state here, and to repeat, that the Wassermann may be fallacious. The clinical facts, that one can gather by sight and touch, are the important points that matter, whatever the result of the blood-test may be. There is a great tendency to neglect clinical training, and to fall back, with unpleasant results sometimes, and rely on laboratory methods alone. They may prove broken reeds if one pays no attention to the clinical aspects.

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(2) *Idem.*—"Syphilis," 'Quarterly Review,' July, 1914.

(3) *Idem.*—"Syphilitic Headaches," 'Clin. Journ.,' 1910, xxxvii, p. 81.

(4) *Idem.*—'Differential Diagnosis of Syphilitic and Non-syphilitic Affections of the Skin, including Tropical Diseases,' 1904, p. 28.

(5) *Idem.*—"Syphilis," 'Quarterly Review," July, 1914 (*v.* historical introduction).

A CASE OF EXTENSIVE PIGMENTED AND HAIRY NÆVUS WITH MOLLUSCOUS TUMOURS.

By W. Mitchell Smith, M.D.,
Tean, Staffordshire.

The patient is a girl, aged 8 years, the eldest of four children. The father and mother are healthy, and there is no family history of birth marks or deformities. The child was born at full term by normal labour. There was no history of maternal impressions, and the mother has had no miscarriages.

At birth the face, trunk, and limbs were covered with dark reddish-brown marks, which have since grown larger in proportion to the growth of the child.

Present condition.—Almost the whole of the cutaneous surface is covered with pigmented patches, varying in colour from reddish-brown to dark blackish-brown; some are covered with long and abundant hair, while others are smoother and show shorter hairs.

The skin of the back, especially along the spine, shows a very dark pigmentation, and is covered with coarse long hair. The skin of the left leg is also very dark and hairy, both front and back. In the unaffected areas, which are chiefly seen on the forearms and back of the right leg (*v.* Fig. 1), the skin is in excellent condition.

On the left arm and leg, which are thinner than the right, the lesions are more pronounced than on the opposite side. The left upper arm is most wasted, and here the whole of the skin is diseased, and resembles a monkey's in texture.

In addition to the nævi the child presents a number of molluscous tumours. The largest, which is about 4 in. long, is attached to the inner side of the left buttock and perinæum on the left side (*v.* Fig. 1), and is divided into two lobes by a fissure midway along the perinæum. A second tumour is to be seen external and inferior to it in the midline of the buttock. A third growth arises from the mons Veneris (*v.* Fig. 2). Incipient molluscous formation is also present in a large round patch on the right forearm just above the wrist, on a blackish-brown patch about 4 in. long, on the outer aspect of the right upper arm from the shoulder downwards, and on a similar though smaller patch on the corresponding area of the left shoulder.

Apart from the skin condition and the difference in size of the limbs on the two sides, the child presents no abnormality. She is intelligent and strong, and has always had good health.

The case of giant nævus recently shown by Dr. J. D. Rolleston (2) at the Children's Section of the Royal Society of Medicine has several features resembling my case, but the lesions were much less extensive, and though a few warty growths were present, there were no large molluscous tumours. Dr. Rolleston has drawn my attention to a paper by H. Fox (1), of New York, entitled "A Case of extensive Pigmented and Hairy Nævus of the 'Bathing-trunk Type' presenting Genital Tumours." In this case in addition to the nævi

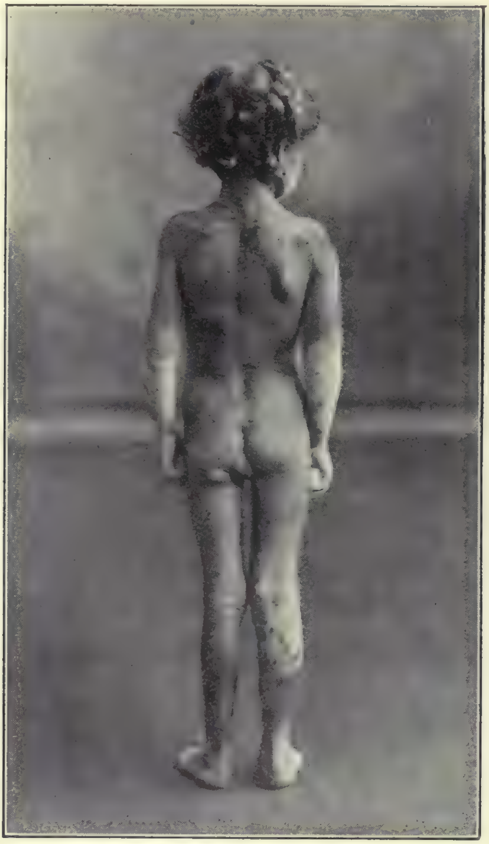

Fig. 1.—Back view, showing distribution of the nævus and tumours of the buttock.

there were two rounded molluscous tumours on the back, one in the right inguinal region, and three attached to the labia majora.

Fox has collected ten other cases of extensive nævus from literature associated with similar tumours.

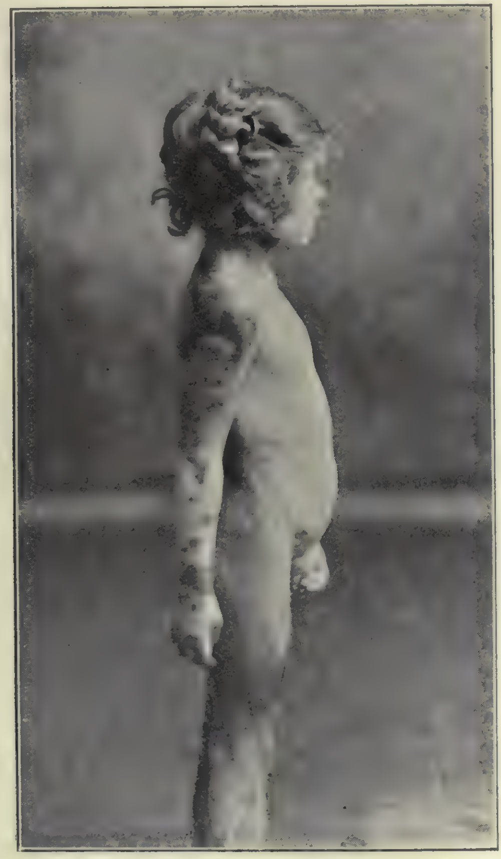

Fig. 2.—Side view, showing distribution of the lesions and tumour of mons Veneris.

In cases of this kind extensive treatment is impossible, but Fox suggests that some improvement may be obtained in the lesions in the face and hands by the use of nitric acid, phenol, or carbon dioxide snow.

References.

(1) Fox, H.—'Journ. Amer. Med. Assoc.,' 1912, lviii, p. 1190.
(2) Rolleston, J. D.—British Journal of Children's Diseases, 1915, xii, p. 21.

Philadelphia Pediatric Society.

February the 9th, 1915, W. N. Bradley, M.D., President.

The Mode of Infection and Ætiology of Epidemic Poliomyelitis.—Dr. Simon Flexner, of the Rockefeller Institute, New York City (by invitation), delivered this address. The two problems of uppermost interest in respect to epidemic poliomyelitis are, first, the mode of infection, and second, the nature of the specific micro-organism causing the disease.

Two views are entertained regarding the mode of infection ; according to one, the infectious agent of the disease is communicated by personal contact; according to the other, it is conveyed by the stable fly. The differences involved in these two conceptions are fundamental, and hence the practices for the prevention of the malady based on them must be wholly different if they are to achieve the result desired. For that reason it is imperative that the validity of the two doctrines be carefully scrutinised and appraised.

Examine first the evidence available bearing on the insect conveyance of the disease. This notion was suggested in the first place by the seasonal prevalence of epidemic poliomyelitis, which is predominantly a disease of midsummer and early autumn. However, it is not, strictly speaking, thus narrowly limited in incidence, since cases occur in the spring and even in the winter months, although these are few in number.

In the second place, the notion is supported by the rural character of some epidemics, as well as by the relatively wide distances which separate many of the cases. In these instances, however, the peculiarities are of degree rather than kind. Epidemics of poliomyelitis prevail also in towns and cities, and cases may be closely associated as well as widely separated.

The notion of insect carriage received for a time the support of experimental evidence, without which it would have remained merely a suggestive possibility ; and the wide currency which this notion has obtained among the laity depends wholly on an imperfect experimental foundation which has now been largely disproved.

At the Congress of Hygiene and Demography, held in Washington in 1912, Dr. M. J. Rosenau, of the Harvard Medical School, announced that he had succeeded in communicating experimental poliomyelitis to several monkeys by permitting stable flies to feed first on monkeys inoculated intracerebrally with the poliomyelitic virus, and then on normal monkeys. Although the studies which he reported were then incomplete and he made his announcement in a judiciously tentative fashion, he expressed the opinion that the flies might carry the infective agent, and also that in conveying it from one human being to another an intervening period of time was necessary, during which the virus underwent some change of development within the insect host. This announcement was followed very quickly by a confirmatory one emanating from Anderson and Frost of the United States Public Health Laboratory in Washington.

No satisfactory explanation of the successful experiments performed by Rosenau and by Anderson and Frost has thus far been offered, since in no other instance have confirmatory results been obtained. The great importance of the subject led immediately to a repetition of the experiments in several laboratories in this country and in certain laboratories abroad without yield-ing a single instance of positive infection. Moreover, Anderson and Frost themselves a little later announced that they had failed subsequently to repeat their earlier successful experiments.

Without pursuing this topic further, we may now turn our attention to the other conception, namely, that infection in poliomyelitis is conveyed through personal contact. In considering that view of the mode of infection it is necessary at the outset to have an understanding of the clinical types of poliomyelitis. So long as the affection was conceived of as a frankly paralytic disease in all instances, it was impossible to trace the connection of cases one with another, but once it was determined—as was done by Wickman—that epidemic poliomyelitis assumes non-paralytic and ambulant forms, the subject of the mode of infection was opened up to re-study and to a wholly new interpretation.

The proof of the existence of abortive and ambulant forms of poliomyelitis is not clinical merely, but depends also on laboratory findings. The several laboratory findings may be stated briefly to be the following: the detection of changes in the cerebro-spinal fluid; the demonstration of neutralising immunity principles in the blood; and the determination of the presence of the virus of poliomyelitis on the upper respiratory mucous membrane. The changes in the cerebro-spinal fluid consist of increased cellular content and the presence of globulin; the two conditions may coexist. The new cells are chiefly lymphocytes. The neutralising properties of the blood depend on the appearance in the serum of immunity principles, absent from the normal blood, which correspond to similar immunity principles arising after a frank attack of paralytic poliomyelitis. The virus of the disease has been detected on the nasal and pharyngeal mucous membrane in such quantity and quality as to make possible the communication of poliomyelitis to monkeys. The unmistakable demonstration, both by clinical observation and laboratory tests, of the existence of abortive and ambulant cases of epidemic poliomyelitis—many of which may and do escape detection—indicates how wide, indiscriminate, and unsuspected the distribution of the virus by personal contact may readily become.

But the facts now in hand carry us beyond the distributing power exercised by the frank and abortive ambulant cases, since it can now be affirmed that epidemic poliomyelitis is one of the diseases in which both healthy and chronic carriers of the microbic agent of infection arise. The few healthy carriers thus far detected consist of persons who have been in very close and intimate contact with persons acutely ill with poliomyelitis; for example, the parents of a paralysed child. The few instances of chronic carriers now known consist of persons who have recovered from an acute attack, but in whom at the expiration of several months the virus has been detected, by animal inoculation, on the upper respiratory mucous membrane. The two classes last mentioned of potential carriers of the infectious agent add materially to the possibility of wide dissemination of the virus.

It is very important, now that the existence of healthy and chronic carriers of the infectious agent of epidemic poliomyelitis is established, that there should arise undue concern regarding the dangers of conveying the disease, while the fact should not be taken into account in devising measures for the prevention of the conveyance. Possessing as we do at present only the important means of animal inoculation for detecting the virus of poliomyelitis, still it appears that the healthy and chronic carriers are not more numerous in this disease than in many other infections of more common occurrence.

Given, therefore, the possibility of the distribution of the virus being affected by, first, the frankly ill; second, the slightly ill; third, healthy, and fourth, chronic carriers, the striking discrepancy noted between the prevalence of cases in small, sparsely populated rural communities and the more thickly populated towns and cities at once disappears.

To sum up the aspect of the subject concerning the mode of infection, we may now state emphatically that the indications are all in favour of personal communication of the virus. Hence the measures which we seek to put into effect against the occurrence and spread of epidemic poliomyelitis should now be based on the conception of the personal factor as paramount, and not on the notion of insect carriage.

As to the problem of the nature of the virus or micro-organism causing epidemic poliomyelitis, you will recall that the virus is filterable; that is, it passes through the pores of earthenware filters which exclude under similar conditions the ordinary bacteria. We are now acquainted with a score or so of diseases in man and animals definitely proved or believed to be caused by parasites belonging to this filterable class. It is self-evident that these parasites are very minute; and because of their minuteness it has until recently been doubted whether they had actually been viewed under the microscope.

About two years ago, Noguchi and Flexner announced that cultures of a very minute organism had been obtained which might be regarded as the possible microbic agent of epidemic poliomyelitis. The cultures were derived from the central nervous organs of human beings and monkeys who had had poliomyelitis. As evidence of the nature of the cultures it could then be stated that experimental poliomyelitis had been produced in monkeys by inoculation of the cultures. We have recently confirmed this result in an interesting manner. The culture employed for inoculation had been isolated about eighteen months before and had gone through a number of generations in artificial mediums. It was cultivated finally in a mixture of ascitic fluid and broth, and the fluid carrying large numbers of the micro-organisms —which are of extremely minute size—was injected, in some cases intraspinally, in others intracerebrally and intraperitoneally, into rhesus monkeys. The injection produced no immediate effect; indeed, a single injection causes no effect whatever. But when the intraperitoneal and intraspinal injections are repeated three or four times the animals develop paralysis, and the paralysed animals show the peculiar histologic changes of the central nervous system indicative of poliomyelitis. In other words, these experiments showed that a culture of the micro-organism mentioned, long removed from the nervous tissues, is capable of causing infection of monkeys, and that by this means the symptoms and lesions of epidemic poliomyelitis are produced.

The fact that several inoculations of the culture were required to cause infection agrees with observations previously made by Lewis and Flexner, that when a subminimal dose of the usual virus of poliomyelitis is injected into monkeys, no effect is produced; but when the subminimal injections are repeated, paralysis may suddenly supervene. The two sets of observations are, therefore, in accord.

From the foregoing we must believe, first, that the agent of epidemic poliomyelitis is carried by persons, not insects, and communicated by them in such manner as to gain access to the upper respiratory mucous membranes of other persons, among whom a portion, being susceptible to the injurious action of the virus, acquire the infection and develop the disease.

The clinical variety or form of the disease which they develop may be frankly paralytic, the meningitic, or the abortive and ambulatory, in which no severe symptoms whatever appear. But however the persons may be affected, they become potential agents of dissemination of the virus of poliomyelitis, as do a number of healthy persons who have been in intimate contact with those who are ill, and another group of persons who have recovered from an acute attack of poliomyelitis. These several classes of infected or contaminated persons constitute the active means through which the virus is spread and to the control of which sanitary measures designed to prevent epidemics must be directed.

Finally, the virus or microbic agent of epidemic poliomyelitis appears now to have been cultivated and to consist of minute globular bodies, capable of being distinctly viewed under the high powers of the microscope.

Abstracts from Current Literature.

Nervous and Mental Diseases.

The tendon reflexes in infancy and childhood (*'Jahrb. f. Kinderheilk.,'* 1914, LXXX, *p.* 423).—**J. Vas** examined 200 healthy children, aged 2 weeks and upwards, and found the knee-jerks present in 98·8 per cent. and the tendo Achillis jerks in 85·7 per cent. He concludes that knee reflexes act in the same manner in infancy and childhood as in adult life. In the few cases in which the tendo Achillis reflexes were not obtained their absence could be attributed to the method of examination, restlessness of the child, and so on. The following method is recommended for examining the tendo Achillis reflex. Place the child on its side on a table facing its friends to divert its attention. Take its foot with the left hand, the index on the tendo Achillis and the thumb on the sole, so as to put the tendon on the stretch, and hold the back of the foot with the remaining three fingers of the left hand, and strike the tendon with the right hand. J. D. ROLLESTON.

Generalised neuro-fibromatosis (von Recklinghausen's disease) (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, *p.* 1358).—**C. A. Elliott** and **A. F. Beifeld** report the case of a boy, who, when about 10 years of age, began to suffer from "lumps" in both cervical regions. Subsequently countless nodules appeared all over the body, and the liver and spleen were enlarged. A diagnosis of Hodgkin's disease was made at first, but on the patient coming under the writers' care, microscopical examination of the tumours revealed the true nature of the disease. The authors are of opinion that von Recklinghausen's disease is connected with the *status lymphaticus* and abnormalities in the ductless glands. T. R. WHIPHAM.

Landry's paralysis (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, *p.* 1845). —**E. D. Fisher** reports the case of a boy, aged 15 years; previous history negative. September 27, 1913, he complained of pain and weakness in the lower extremities, which increased in severity until October 11, when he was admitted to hospital. Examination of the heart and lungs and abdominal organs was negative. There was paralysis of the lower extremities, with loss of reflexes and tenderness over the larger nerve trunks. No anæsthesia.

The urine was negative. The spinal fluid was clear; Fehling's reduction test was positive; the globulin was slightly increased; cells were 7 per c.mm. Smears and cultures for bacteria were negative. The Wassermann was negative; throat cultures negative. An examination of the blood showed 23,500 white cells, with 86 per cent. of polymorphonuclears, 2 per cent. of transitionals, and 12 per cent. of lymphocytes. October 17 there was paralysis of the external rectus of the left eye. The eye grounds were negative. The weakness gradually extended to the upper extremities, with loss of power, which in the course of a week became complete in the hands and arms. October 29 there was difficulty in swallowing and complete paralysis of the muscles of the right eye and of the superior oblique of the left eye. November 7 there was dyspnœa and difficulty in swallowing. All of these symptoms gradually increased in severity, and death occurred November 21 from respiratory failure. The necropsy, macroscopically, showed intense congestion of the cord; no other lesion. Microscopically, there was an interstitial neuritis of the sciatic nerve and congestion of the anterior horns, without perivascular infiltration or meningeal involvement. The medulla showed involvement of the cranial nerve nuclei and degeneration of the axis cylinders for a short distance from the cell body. The whole picture differentiated it from poliomyelitis.

T. R. Whipham.

Congenital agenesic forms of the neuro-muscular system ('*Riv. di Clin. Pediat.*,' 1914, xii, *p.* 562).—**L. Concetti,** at the Pædiatric Congress held at Bologna in September, 1913, dealt with acquired degenerative changes in the neuro-muscular system in children, and which tend to become worse, in contrast to other rarer syndromes which are congenital and which tend to improve. These latter are observed in children who are born with a high degree of anatomical and functional defect, and in them the anatomical element is arrested in its physiological development. Hence with increasing years these children improve, because the nervous or muscular system tends towards complete and normal development. The form of agenesia longest known is that affecting the cerebral cortex and the respective cortico-spinal neurons (Little's disease); more recently described is the muscular atonia of Oppenheim, affecting the peripheral neurones of the spinal cord. A third part of the nervous system which gives rise to agenesic forms is the bulb, as shown in children who for a more or less lengthy period are affected with disturbances of deglutition. With regard to tabeto-cerebellar forms there is the case described by the author in 1911, that by Oppenheim in the same year, and two by Taylor in 1913. They were children who from birth presented the characteristic type of attitude and unstable movement with ataxia, tremors of the limbs, tendency to fall backwards, inco-ordinate active movements of the upper and lower limbs, slow speech, brisk reflexes, normal intelligence, and absence of muscular atrophy; slow spontaneous and progressive improvement occurred. The author describes two cases under his own observation in which the muscular system was implicated, under the name of "primary congenital familial amyoplasia." Reference is also made to forms of arrested or deficient development of ossification. The author concludes that while in acquired forms there are degenerative changes in already formed elements, in these congenital forms there are agenesic aplastic changes in which the constructive elements are not formed, or are formed with more or less delay, or in which their formative activity is arrested. As regards ætiology, a toxic influence may have occurred during intra-uterine life, or there may have been changes in endocrinous secretions, so that besides injections of lecithin, iron, arsenic, and phosphorus, opotherapy may be tried as a curative agent. VINCENT DICKINSON.

An unusual form of birth palsy (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, *p.* 2282).—**A. Gordon** reports the case of an infant who was born as a breech presentation, forceps being applied in the mento-occipital position for a final delivery of the head. In both forearms there was a symmetrical palsy of the flexors of the wrists. The child could elevate, abduct, adduct, rotate, pronate, and supinate the arms and forearms, but the wrists remained extended in all these movements. The fingers were all flexed as in a normal condition. Evidently the two branches of the median and ulnar nerves supplying the flexor carpi radialis and flexor carpi ulnaris, respectively, became involved during the accoucheur's manipulation. The damage was done to those filaments of the seventh and eighth cervical roots which enter into the formation of the ulnar and median nerves, but which become separated from the main trunks at the level of the upper third of the forearm to enter the corresponding muscles. T. R. WHIPHAM.

Infantile hemiplegia (*'Journ. Amer. Med. Assoc.,'* 1915, LXIV, *p.* 1577). —**H. W. Wright** records the case of a male infant, aged 19 months, who had once bled rather profusely from a very slight cut. Within a period of a little over three months the child had five transient attacks of hemiplegia on the right side, from all of which he recovered. The Wassermann and von Pirquet tests were negative. The writer considers that the most likely diagnosis was hæmorrhage from the lenticulo-striate artery into the middle portion of the left internal capsule and lenticula. T. R. WHIPHAM.

Cerebral hæmorrhage (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, *p.* 1028). —**W. W. Mott** reports the case of a girl, aged 3 years, who accidentally fell backward down several steps, striking her head on the pavement. Afterwards she was able to stand and walk, and finally went to sleep naturally. An hour and a half later she awoke, vomited several times and appeared dazed. A twitching of the left arm was noticed, and there was a contusion over the right mastoid region. The pulse became rapid and the respirations shallow and irregular. Convulsive movements appeared in the right arm and leg, the eyes were turned to the right, and the pupils did not react. Evidently there was intracranial hæmorrhage over the right motor area. Trephining was performed without an anæsthetic, and the ascending frontal branch of the middle cerebral artery was found to be ruptured, giving rise to considerable hæmorrhage. The vessel was tied and the wound closed with a narrow drain. The symptoms ceased at once, and the patient made an uneventful recovery. T. R. WHIPHAM.

Tumour of the crus cerebri (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, *p.* 1662).—**J. H. W. Rhein** reports the case of a coloured girl, aged 12 years. The family history was negative. There was no history of tuberculosis, syphilis, or mental disease. Both parents and one brother were well. Her birth had been normal, and the child developed normally, physically and mentally. As an infant she suffered from measles, chickenpox, and whooping-cough. Two years previous to admission she had suffered from an attack of typhoid fever, and in the previous summer had had a second attack, which her parents stated was associated with malaria. Two years previously she partly lost the use of her right arm and hand, and after an attack of typhoid malaria eighteen months later the right leg became weak. Two months ago there developed pains over the left eye which radiated to the left ear, and ptósis of the left eye. During the two weeks before admission to the hospital she had vomited every morning immediately after breakfast and had convulsions of the right side of the body lasting two or three minutes and recurring several times during the day. She was stuporous during the attack, but regained consciousness immediately after the twitching ceased. There had been for four months difficulty with the rectal and vesical sphincter, the latter consisting of difficulty in emptying the bladder. The patient was a poorly nourished girl. The physical examination of the heart and lungs proved to be normal. The liver and spleen were not enlarged, and there were no palpable masses in the abdomen. There was paralysis of the right side of the face in the lower distribution of the facial nerve. The patient moved the left side of the face and both sides of the forehead well, and closed both eyes equally well. There was some rigidity of the neck when rotary or to-and-fro movements of the head were made. The pupils did not react to light or in accommodation. In making an effort to follow an object to the right, the right eyeball did not move beyond the median line and the left eyeball moved only a slight distance to the right. In following an object to the left the right eyeball moved to the inner canthus and the left eyeball remained motionless. In following an object upward neither eyeball moved at all. In following an object downward the right eyeball moved only slightly and the left eyeball not at all. The tongue protruded markedly to the right. The patient winced when the face was scratched with a sharp point on both sides. The finger to nose test showed marked ataxia on the right side and slight on the left. In the right arm there was marked contracture of the biceps muscle which caused flexion of the forearm on the arm. She could not voluntarily extend the forearm. The grasp of the right hand was almost *nil* and was feeble on the left side. Rotary movements of the right arm could scarcely be made at all. The left arm was feeble, but all movements were possible. There was no diadokokinesia. In walking she dragged the left leg, although both legs appeared to be weak. Both knee-jerks were exaggerated and equal. There was no ankle-clonus, but the Babinski sign was present on both sides. The toes on both sides were hyper-extended, especially on the right. Weakness of the legs prevented a satisfactory test for diadokokinesia. An examination of the eye showed intense swelling of the nerve-head and surrounding retina with a few scattered hæmorrhages. Later the pupils became unequal, the right being smaller than the left, and the left eyeball protruded more than the right. A diagnosis of tumour of the upper part of the pons was made. *Necropsy:* The left crus cerebri was very much enlarged and extended to the right of the median line. On section it was found that the enlargement was due to a caseous tumour which extended to the upper limit of the pons below and the basal ganglia above. The internal capsule was somewhat implicated in its anterior limb, and the optic thalamus was also apparently involved in its anterior third. The focus in the pons extended to the opposite side to a slight degree. There was also a small focus of circumscribed caseation in the white matter of the frontal convolution on the left side situated half an inch to the outside of the caudate nucleus. On microscopic section the tumour proved to be a tubercle.

T. R. Whipham.

Tuberculous tumours of the brain (*'Am. Journ. Dis. Child.,'* 1915, IX, *p.* 508).—**E. B. Friedenwald** and **W. Greenfeld** summarise the literature and report a personal case in a boy, aged 6 years. In June, 1912, he had a convulsion, and was said to have passed a round worm. The blood showed a marked eosinophilia, and Wassermann's reaction was positive. Santonin and calomel were given, but he did not pass any more worms, and five months' anti-syphilitic treatment had no effect. The convulsions became more and more frequent, always coming on with twitchings of the right arm and leg. Death, preceded by signs of pneumonia, took place in January, 1913, about seven months after the onset. The autopsy showed tuberculous pneumonia of the right lung and a general miliary tuberculosis. The cerebral meninges were congested and opaque, and the left hemisphere showed a large mass situated in the ascending parietal and partly in the superior marginal and superior parietal convolutions opposite the leg trunk and arm motor centres. Four masses of various sizes were found in the right hemisphere, three on the surface and one on section. Histologically all the masses showed the ordinary changes produced by the tubercle bacillus. Great masses of tubercle bacilli were found in the vessel walls and in the lumen of the vessels in the tubercles of the brain and bronchial lymph glands. The authors have been unable to find any other case in which tubercle bacilli were present within the blood-vessels. A search was made for the *Spirochæta pallida* in the diseased organs with negative results.

J. D. Rolleston.

Encephalitis and acute ataxia (*'Arch. de Méd. des Enf.,'* 1914, XVII, *p.* 561).—**L. Guinon** reports two cases in boys, aged 4 years, which occurred during the poliomyelitis epidemic of 1910, in each case after measles. Case 1: The first symptoms were sudden loss of the use of the legs without impairment of consciousness, headache, or vomiting. Subsequently there was gradual loss of intelligence, the language became that of a child of twelve or fourteen months old, with cries, restlessness, and stiffness of the neck and left side of the body. After these symptoms had lasted a fortnight there were six days of torpor, except that the child wept and showed defensive movements. The face was very red. There was general stiffness and exaggeration of the reflexes. There was also contracture of the right side of the face and left side of the body. There was no Kernig's sign, and the eyes were normal. These symptoms gradually subsided, and a period of aphasia and ataxia followed of about ten days' duration. Convalescence took place on about the thirtieth day, and in another ten days recovery was complete. Case 2: The first symptoms were headache, pain in the neck, and nuchal rigidity. The reflexes were slightly exaggerated, and the plantar reflex was extensor. For the first two or three weeks there was apparent unconsciousness, incontinence, continual whining, and almost complete inertia to stimuli, but without anæsthesia to pain. This period was followed by ten days' extreme restlessness, choreic movements of the head causing erosions. The legs were still stiff, but the child understood what was said. In the third phase rapid recovery took place. In both cases the normal condition of the cerebro-spinal fluid excluded meningeal hæmorrhage and meningitis.

J. D. Rolleston.

Progressive lenticular degeneration (*'Journ. Amer. Med. Assoc.,'* 1914, LXIII, *p.* 1380).—**W. B. Cadwalader** reports two cases in men, aged 18 and 36 years, which began at the ages of fourteen and sixteen respectively.

The first case developed quickly, the initial symptoms being sluggishness, bad manners, a dribbling of saliva, and dysarthria. Mental deterioration and jerking movements became manifest later with a tonic spasm of the muscles of the eyelids and of the face. The muscles of the entire body also developed a state of hypertonicity causing a tendency to fall backward. There was no pain nor any sensory changes, and the reflexes were all normal. Case 2: The patient's mother had intermittent attacks of melancholia, and one sister and two brothers were affected similarly to the patient; one of the brothers was also mentally deranged. When the patient was aged sixteen a tremor first affected the right side. Muscular rigidity gradually spread to the muscles of the neck and later involved the entire body and all the extremities. There are constant involuntary movements which are increased by emotion or voluntary effort. Dysarthria is pronounced, but the speech is not scanning. The tendon reflexes are slightly exaggerated, but the others are normal. The Wassermann reaction is negative. For the last five or six years the disease has been stationary. All the viscera in both cases were normal. T. R. Whipham.

Streptococcus meningitis ('*Arch. of Ped.*,' 1915, xxxii, *p.* 28).—**P. L. Du Boys** and **J. B. Neal** record a case in a man, aged 26 years, secondary to otitis, successfully treated by intraspinal and intravenous injections of antistreptococcus serum, a streptococcus vaccine, and urotropine internally. J. D. Rolleston.

Pneumococcal meningitis ('*Rev. Méd. del Uruguay*,' 1915, xviii, *p.* 1). —**L. Morquio.**—Pneumococcal meningitis is most frequent in infancy, unlike cerebro-spinal meningitis, which is common in older children. In the clinical characters there is also some difference in the two diseases. In cerebro-spinal meningitis the onset is sudden and the meningeal symptoms are marked; in pneumococcal meningitis the onset is usually secondary to pneumonia or otitis, and the meningeal signs are less marked. Herpes, common in cerebro-spinal meningitis, is rare in pneumococcal meningitis. The cerebro-spinal fluid in meningococcal meningitis is more purulent as a rule than in pneumococcal meningitis. A clear fluid may be found in pneumococcal meningitis, although after centrifugalisation it may show a fair number of cells. A turbid fluid may also be found with few cells, but many pneumococci. There are various forms of pneumococcal meningitis: viz., fulminant, prolonged and comatose forms with rapid course. The prognosis is graver than in meningococcal meningitis. Treatment consists in lumbar puncture repeated daily or every second day until the fluid comes out slowly, warm baths at 100° F. for five to ten minutes two or three times a day, and urotropin internally in doses of $7\frac{1}{2}$ to 15 gr. daily.

J. D. Rolleston.

Some features of pneumococcus meningitis ('*New York Med. Journ.*,' 1914, c, *p.* 895).—**A. Gordon.**—First, the specific micro-organism may not be detected in the cerebro-spinal fluid during life, rendering diagnosis difficult. Secondly, a purulent or sero-purulent exudation is most usually found on the vertex, but occasionally also at the base. The pus is not thick but viscid. Occasionally the exudation is serous. Thirdly, there are some cases where the nervous symptoms are either absent or do not suggest meningitis, and in cases of pneumonia meningitis may be found post mortem when there have been no nervous symptoms during life. Gordon quotes a case of purulent meningitis in which this was the case, and pus was found both on the vertex and base. J. Porter Parkinson.

Recurrent meningitis, due to lead, in a child, aged 5 years ('*Am. Journn. Dis. Child.*,' 1914, viii, *p.* 377).—**H. M. Thomas** and **K. S. Blackfan.** —A boy, aged 5 years, was admitted to hospital in a state of coma. All the symptoms pointed to a serous meningitis of unknown origin. After a time he recovered. Six months afterwards he returned for frequent epistaxis, and three months later he was again admitted for coma with a bright lead-line on the gums. It was discovered he had been in the habit of biting the white lead paint from the railings of his cot. He recovered from this attack, but three weeks later he had a severe convulsion and died. No post-mortem. The literature of the subject is considered, and the authors consider lead has a special effect on the meninges and central nervous system. F. R. B. Atkinson.

Hydrocephalus ('*Journ. Amer. Med. Assoc.*,' 1915, lxiv, *p.* 816).—**R. J. E. Oden** puts forward the suggestion that hydrocephalus may be caused by a contracted pelvis in the mother which during labour causes compression of the child's head sufficient to occlude, if not obliterate, the aqueduct of Sylvius. In favour of his proposition he quotes the case of a woman who was found to have a contracted pelvis. Her first child was undersized at birth, and although the labour was very difficult it terminated normally and the child remained healthy. Her second and third children developed hydrocephalus, but the fourth was delivered through a Cæsarean section with a favourable result. T. R. Whipham.

A case of pseudo-meningocele ('*La Clin. Infant.*,' 1914, xii, *p.* 449).—**Zuber** and **Chatelin** relate the case of a male infant, aged 5 months, born at term by forceps—vertex presentation. At the anterior superior angle of the right parietal there was a prominence the size of an apple. It appeared situated on the skull, which was otherwise normal. The skin was normal, but when the child cried the swelling became distended, the skin red, and the veins prominent. On palpation the swelling was tense and fluctuating. An aperture in the bone with irregular edges could be felt, about 8 cm. long and 4·5 cm. wide, directed obliquely and situated about 1 cm. from the sagittal suture. The parieto-frontal suture was intact. Against the hypothesis of true meningocele was the situation of the tumour, it being quite exceptional to see meningocele, due to congenital malformation from arrest of development, situated at the anterior superior angle of the parietal. Anterior meningoceles are only found on the line which corresponds in the embryo to the first bronchial cleft. The bony orifice from which a meningocele issues is small, with smooth and regular edges; in this case the orifice was large with irregular and thickened edges. Probably the case was one of pseudo-meningocele spuria traumatica of Billroth, in which either some fracture of the parietal had been caused by the use of forceps or an intra-uterine or post-partum fracture. In these subcutaneous fractures the bony edges remain ununited and thickened, and through the orifice thus formed the cerebro-spinal fluid issues, raising up the dura mater and the cutaneous layers which remain normal. Vincent Dickinson.

The voice sign in chorea ('*Amer. Journ. Dis. Child.*,' 1914, vii, *p.* 422; *ibid.*, 1914, viii, *p.* 579; *ibid.*, 1915, ix, *p.* 132).—**W. B. Swift** made over

500 observations of the voice with the kymograph in twenty cases of chorea and found that the voice change consisted in a variation in two vocal elements, a rise in pitch and an increase in intensity accompanying the choreic movements. The techniqne for eliciting the sign is to make the patient sound a prolonged "a," as in "are," and to watch for the changes in vocal pitch and intensity. The test may have to be applied four or five times before the voice-sign shows. Sometimes it occurs the first time tried and regularly every time. Rarely, ten trials are necessary.

J. D. ROLLESTON.

A study of the ætiology in one hundred and seventy-five epileptic children ('*Boston Med. and Surg. Journ.*,' 1914, CLXX, *p.* 521).—**A. W. Fairbanks.**—In only twelve instances was there pronounced hereditary taint, which supports the author's contention that the hereditary factor is slight. In forty-three cases there were conditions during the birth of the children which exposed the brain to great danger. F. R. B. ATKINSON.

A case of infantile tetany ('*Med. Journ. of Austr.*, 1914, I, *p.* 445).—**M. J. Plomley** describes this case in a child, aged 46 hours. Four of the parents' children seem to have died from the same disease. This infant was treated by various drugs, the most valuable being adrenalin, with success.

F. R. B. ATKINSON.

The cause and cure of night terrors in children ('*Arch. of Ped.*,' 1914, XXI, *p.* 906, and '*Med. Press*,' 1915, I, *p.* 369).—**T. A. Williams** relates a series of cases to show the great sociological importance of conditions purely psychological, and to show that these can be removed with precision by physicians who are trained in doing so. J. ALLAN.

Trichotillomania ('*Journ. Amer. Med. Assoc.*,' 1914, LXIII, *p.* 2126).—**R. L. Sutton** records two cases, one a boy, aged 14 years, who were the subjects of trichotillomania, or the abnormal desire of forcibly extracting their own hair. Allied to this is dermatothlasia, or an ungovernable desire to rub, scratch, or irritate the skin on one or more parts of the body, of which an instance is also given. The patients were all of a neurotic temperament, and treatment was of little avail. T. R. WHIPHAM.

Trichotillomania ('*Journ. Amer. Med. Assoc.*,' 1915, LXIV, *p.* 1236).—**J. C. Martin** records the case of a boy, aged 4 years, who about a year ago acquired the habit of jerking hairs out of the left side of his scalp. The habit has gradually become worse and may possibly be checked by shaving the scalp. The patient has never suffered from chorea or spasms of any kind. T. R. WHIPHAM.

Insanity in children ('*Am. Journ. Insanity*,' 1914–15, LXXI, *p.* 471).—**J. H. W. Rhein,** in a study of 44 cases, finds that the manic type of manic depressive insanity occurs most frequently in children. Hallucinations occur only after the acute infectious fevers. Systematised delusions are uncommon. All his cases recovered from their attacks. One case of melancholia in a girl, aged 11 years, is described. She had epileptic fits. During preparation for confirmation she became depressed and imagined that she had been guilty of committing many sins. These symptoms lasted for a month and then completely subsided. Another case of melancholia occurred in a boy, aged 13 years. This was of longer duration, and complete cure did not result. There was a history of traumatism.

CHRISTOPHER ROLLESTON.

Juvenile psychosis ('*Journn. Amer. Med. Assoc.*,' 1914, LXIII, *p.* 1283).—**H. H. Drysdale** remarks on the small number of cases recorded, but believes that this is a very much more prevalent disorder than is usually conceded. He reports the case of a boy, aged 11 years, who had been somewhat too religiously brought up. Until the age of seven he appeared normal, but as he grew older his mental condition changed, and he developed hallucinations and other psychical phenomena. Isolation and a course of hot packs brought about a marked improvement. His home surroundings were made happier and more congenial, with the result that he has since continued in good health, both physically and mentally.

T. R. WHIPHAM.

Surgery.

The operative treatment of cleft palate ('*Lancet*,' 1915, I, *p.* 479 and *p.* 533).—**H. Blakeway** discusses this subject at considerable length and gives a tabular statement of 100 consecutive cases of cleft palate treated by Lane's operation, with their immediate and remote results. The different operations for this condition are considered, and the author concludes that Langenbeck's operation is still the best for routine use. The question as to the best age for its performance does not admit of precise answer. It is doubtful if any great advantage results from performing it during the first year of life, and it is certain that the prospect of success during the second or third year will often be better. Further delay is not usually necessary, but may in bad cases be advisable. Surgeons, who, a few years ago, were content to operate in the third year or later, now often perform median suture on children one or two years old. The experience of the operator, the width of the cleft, together with the height of the palatal arch and the general health of the child, have all to be considered before a decision is reached. If the condition is complicated by the presence of a hare-lip, closure of the latter during the first few weeks of life has a valuable effect in causing obliteration of the most anterior part of the cleft.

J. ALLAN.

Appendicular abscess in an infant, aged 13 months ('*Arch. de Méd. des Enf.*,' 1914, XVII, *p.* 773).—**Phélip** records a case in a female infant, bottle-fed, who had suffered from constipation since the age of 11 months. The symptoms were fever, diarrhœa, blood in the stools, and distension of the abdomen. A swelling could be felt in the right iliac fossa per abdomen and per rectum. The diagnosis lay between appendicitis and intussusception. A lateral laparotomy under chloroform was performed. and an appendicular abscess was found with a free stercoral calculus, Recovery was complete.

J. D. ROLLESTON.

Congenital intestinal obstruction ('*Amer. Journ. Dis. Child.*,' 1915, IX, *p.* 455).—**V. C. Rowland** reports a case in a first-born male child, aged 4 days, who had had no bowel movement since birth. On the second day it vomited dark yellow material resembling meconium, and again on the third day. On the fourth day the abdomen was very distended. Repeated soapsud enemata brought away no meconium or blood, but only a little mucus. Temperature, 102–100·5° F. General condition good. The abdomen was opened at 10 p.m. on the fourth day. The condition was found to be a complete twist of the mesentery of the small intestine with complete obstruction approximately at the middle of the small intestine. On untwisting, gas escaped through into the collapsed bowel beyond. During the night the child had two good bowel movements of meconium, and the next day about ten motions. The temperature, pulse, and respiration kept high, and death occurred about thirty hours after the operation. No necropsy. J. D. Rolleston.

Intestinal obstruction due to sigmoid volvulus (*'Journ. Amer. Med. Assoc.,'* 1915, lxiv, *p.* 1744).—**A. McGlannan** reports an instance of this form of obstruction, which is unusual in a child. The patient was a girl, aged 6 years, who for two days had had abdominal cramp and diarrhœa, followed by vomiting and tenesmus. At the operation a volvulus of the sigmoid was discovered and relieved. Six weeks later the redundant sigmoid was resected and an anastomosis was performed. A slight leaking from one end of the bowel occurred, but the child made a good recovery.

T. R. Whipham.

Thymectomy (*'L'Echo Méd. du Nord,'* 1914, xviii, *p.* 176).—**Gandier** and **Wery** showed, at the Soc. de Méd. du Nord, a thymus removed for thymic suffocation from an infant, aged 10 months. Death occurred five days afterwards, due, the authors think (there was no section), to compression of the nerves by the remaining portion of the left lobe, which could not be removed. F. R. B. Atkinson.

Multiple cartilaginous exostoses—hereditary deforming chondrodysplasia (*'Journ. Amer. Med. Assoc.,'* 1915, lxiv, *p.* 1642).—**A. Ehrenfried** describes at some length a condition which is claimed to be a distinct clinical entity, and to which he gives the name deforming chondrodysplasia. The condition is characterised by (1) the occurrence of multiple, more or less symmetrical, cartilaginous and osteo-cartilaginous growths within and upon the skeletal system, generally benign, and resulting from a disturbance in the proliferation and ossification of the bone-forming cartilage; (2) the occurrence of certain typical secondary distortions and deformities of the skeleton; (3) the demonstration of inheritance in a large proportion of the cases. Hyperostoses above the affected epiphyses are the rule, but true exostoses are less frequent and of secondary importance. Photographs and skiagrams of a case are given. T. R. Whipham.

The metabolism in osteogenesis imperfecta, with special reference to calcium (*'Amer. Journ. Dis. Child.,'* 1914, vii, *p.* 436).—**A. Bookman** comes to the following conclusions: (1) In active cases the calcium retention is somewhat below or very decidedly below the normal. (2) It is probable that variations in the course of the disease cause changes in the calcium balance. (3) The deficient retention of calcium is apparently influenced favourably by cod-liver oil and phosphorus, and still more so by calcium lactate. J. D. Rolleston.

A case of achondroplasia (*'Brazil Medico,'* 1914, xxviii, *p.* 123).—**Austregesilo** and **Esposel** report a case of achondroplasia, which they say

is not rare in Brazil although not often reported. A photograph and skiagrams are included in the article, which gives complete measurements of the patient. There was nothing known in the general condition, physical or mental, of the patient.
M. D. EDER.

Congenital deformity of both hands and both feet (*'Arch. of Ped.,'* 1915, XXXII, *p.* 274).—**W. N. Bradley.**—A male child, aged 5 months, showed the following deformities: In the right hand the fourth finger was completely missing. The fifth finger had a normal metacarpal, but only two phalanges, the third phalanx being rudimentary and flexed. In the left hand the second and fourth fingers were missing, and the little finger was similar to that on the right hand. In the right foot the great and second toes were webbed, and also the proximal and middle phalanges of the third and fourth toes. There was incomplete webbing of the proximal phalanges of the little toe and adjacent toe. In the left foot the great and second toes were webbed between the proximal phalanges. The third and fourth toes were missing. The fifth toe showed a normal metatarsal and two rudimentary phalanges. The toe was curved under the sole. The child was normal in every other respect, and there was no other abnormality in either branch of the family nor a history of maternal impressions.
J. D. ROLLESTON.

Polydactylism as a hereditary character (*'Journ. Amer. Med. Assoc.,'* 1915, LXIV, *p.* 1640).—**J. W. Brandeis** records instances of polydactylism in a brother and sister whose parents were first cousins, but presented no abnormality. He further dwells upon the hereditary nature of the trait and discusses the Mendelian principles as related to this condition.
T. R. WHIPHAM.

Acrocephalosyndactylism (*'Amer. Journ. Dis. Child.,'* 1915, IX, *p.* 446).—**B. F. Davis** records a case of this condition which presents the following characters: The skull is flattened posteriorly so that the external occipital protuberance is lacking; the squamous portion of the occipital bone is smooth and vertical; just above the lambdoid suture the skull bends forward and upward, reaching its maximum height at the bregma, where it meets at an acute angle the plane of the forehead. The frontonasal suture is widely open at birth, and remains so for the first three or four years of life, while the lambdoid suture is usually firmly closed. The transzygomatic and transtemporal diameters are usually increased. The bridge of the nose is usually depressed, and frequently there is exophthalmos. There is a horizontal shelf-like projection from the right and left alveolar ridges into the nose. The projections meet anteriorly. The teeth are rather irregularly implanted. The hands and feet present more or less complete syndactylism, which is always of the same type. In the hands the union is more intimate at the tips of the fingers than at the bases. Usually the nails of the three middle fingers are fused. The thumb and little finger may be free. The toes are grown together into a homogeneous mass whose anterior edge is bordered by the nails of the fused toes. Frequently the great toe may remain free. In some cases the number of fingers or toes is reduced to four, in others it may be increased to six or seven, even up to nine. The ætiology is unknown. There is no familial or hereditary character in connection with it. Lues and hydramnios during pregnancy may occur, but are not constant. The syndactylism may be due to amniotic adhesions, or there may be a trophic correlation between the faulty development of the base of the brain and that of the extremities. The condition does not necessarily shorten life, and the intelligence may not be seriously impaired. The ages of the patients on record range from a few weeks to twenty-one years.

J. D. Rolleston.

Double club-foot in twins (*'Med. Record,'* 1915, lxxxvii, *p.* 1022).—**L. W. Ely.** The twins were both girls, aged 3 weeks, and supposed to have been seven months' babies. They were the first children of the mother. There was no family history of deformity and no other deformities co-existed. The occurrence of double club-foot in twins is unique. Treatment consists in gradual reduction by plaster of Paris bandages.

J. D. Rolleston.

Talipes equinus (*'Med. Press,'* 1915, i, *p.* 496).—**Willmott Evans** maintains that it is seldom necessary to operate on very small babies for congenital equino-varus; it is nearly always sufficient to employ manipulation and the use of a splint, and by these means get the foot back into a right position; but where the child has reached the age of two years the most suitable time for manipulation treatment has gone by, and an operation is nearly always needed. In employing tenotomy the tenotome can be passed through the tendon from the skin towards the deeper parts or in the opposite direction. Neither method is essentially superior to the other, but it is important not to wound the skin, as subcutaneous tenotomy is less likely to lead to sepsis. Should a vessel be wounded when dividing the tendon, it is hardly ever necessary to do anything more than apply a pad to the part and bandage it on fairly firmly. In what position shall the foot be placed after the tenotomy? The older practice was to leave the foot in its original position, and to draw it into the normal position slowly by gentle traction day by day; by this method the bond of union between the two portions of the severed tendon becomes long and thin and of little functional value. Far better is the modern practice of placing the foot at once into the position which it is desirous that it should assume. When this is done exudation material fills up the space between the cut ends, and the firm mass of new tendon material is formed. In all tenotomy operations massage should begin early—say at the end of a week. Tenotomy is never advisable in paralytic deformities unless at the same time measures are taken to maintain the foot in the new position.

J. Allan.

Typhoid periostitis in a child (*'Rev. med. y chir. pract.,'* 1914, xxxviii, *p.* 457).—**P. Olmedo.** A boy, aged 12 years, in convalescence from typhoid fever, developed a subperiosteal abscess on the inner surface of the tibia. A pure culture of typhoid bacilli was obtained from the pus. Rapid recovery followed operation.

J. D. Rolleston.

Surgical tuberculosis (*'Journ. State Med.,'* 1914, xxii, *p.* 714).—**H. J. Stiles** emphasises the fact that the greater part of the surgical tuberculosis met with in the children of this country is of bovine origin, and makes suggestions for the stamping out of bovine tuberculosis. Provision should be made for the systematic and uniform veterinary inspection, not merely of the byres in the city, but also of the cows on the small farms which supply milk to the labourers employed on the farms and to their country neighbours. The inspection should be carried out by whole-time veterinary surgeons. Power should be given to large municipalities to control the milk supply which is consigned to them from country districts. If legislation on these lines, along with the provisions embodied in the Tuberculosis Order of the Board of Agriculture and Fisheries, be thoroughly and conscientiously taken advantage of by the local authorities throughout the country the amount of surgical tuberculosis met with in children ought to rapidly diminish. Until such legislation has been in force for some time it is the duty of the medical profession to insist on the boiling of all milk given to children. J. Allan.

Tuberculous epiphysitis (*'Med. Press,'* 1915, I, *p.* 351).—**Willmot Evans** reports a case in a girl, aged 8 years. The recognition of the epiphyseal origin of the tuberculosis of a joint is greatly assisted by a skiagram; in fact, without the use of X rays it is rarely possible to recognise the condition sufficiently early to ensure a successful result. The author regarded it as extremely important that skiagrams should be taken in all cases of joint pain in children, even when the probability of its being due to tuberculosis was but small. The obvious treatment is to remove the original source of the disease, thus cutting off the supply of tuberculous bacilli and allowing the *vis medicatrix naturæ* of the synovial membrane to have its full action assisted by immobilisation of the joint. This method of treatment can succeed only when the tuberculous process in the joint has not gone too far. J. Allan.

Acute influenzal thyroiditis and Pott's disease (*'Arch. de Méd. des Enf.,'* 1914, XVII, *p.* 434).—**Phélip** and **Trèves.** A girl, aged 13 years, with Pott's disease of the lower cervical vertebræ, developed the gastro-intestinal form of influenza followed by acute thyroiditis. Violent dyspnœa ensued owing to compression of the trachea by the enlarged left lobe of the thyroid. Tracheotomy was performed, and the thyroiditis rapidly subsided without suppuration. There was no causal connection between Pott's disease and the thyroiditis, the co-existence of the two conditions being a mere coincidence. Thyroiditis in influenza has been noticed by previous writers, but it is very rare to find it accompanied by so much local and general disturbance. J. D. Rolleston.

A case of lumbar spinal abscess communicating with the lung (*'Med. Chron.,'* 1915, LXI, *p.* 85).—**H. Platt.** A boy, aged 13 years, who had had spinal trouble since the age of two, and had had a lumbar spinal abscess for the last six years, had the sinus injected with Beck's bismuth paste for the purposes of outlining the track. Immediately after the injection the paste appeared in the mouth, the boy expectorating it without any sign of discomfort. X rays showed that the abscess cavity communicated with the lung. J. D. Rolleston.

The treatment of cervical adenitis in children (*'Boston Med. and Surg. Journ.,'* 1914, CLXX, *p.* 532).—**W. E. Ladd** considers that extirpation of all infected glands with the primary focus yields the highest percentage of cures. Operation should be performed before the glands have broken down. Hygiene has a very important place in the after-treatment.

F. R. B. Atkinson.

A case of chondro-osteo-sarcoma: amputation at the hip (*'Boston Med. and Surg. Journ.,'* 1914, CLXX, *p.* 511).—**R. W. Borell** narrates this case in a boy, aged $11\frac{1}{2}$ years. A piece of the tumour removed revealed on microscopic examination the above condition. The removal of the hip was attended with complete success. F. R. B. Atkinson.

Congenital lymphangioma situated over the sternum (*'Lancet,'* 1915, I, *p.* 182).—**J. A. C. MacEwan** reports this case in a girl, aged 8 years. The growth was excised, and the pathological report, which is given in full, indicates the condition to be one of lymphangioma.

J. ALLAN.

Ovarian carcinoma in a child aged 11 years (*'Journ. Amer. Med. Assoc.,'* 1915, LXIV, *p.* 1577).—**V. B. Knott** reports the case of a healthy-looking girl, aged 11 years, who presented a large movable tumour in the middle line of the abdomen, with tenderness in the right iliac region. Until three days previously there had been no symptoms. The tumour and the appendix, which was acutely inflamed, were removed. The former was cystic and weighed 3 lb. 2 oz.; it was "a teratoma in a state of carcinomatous degeneration." Recurrence soon occurred, and the patient died in a little over seven weeks.

T. R. WHIPHAM.

Fibro-myxo-sarcoma of the mesentery in an infant (*'La Pediatria,'* 1915, XXIII, *p.* 184).—**L. Chiaravalloti** reports the case of a boy, aged 2 years, who had suffered for four months from constipation, severe abdominal colic, and marked abdominal enlargement. Examination showed the abdomen distended and tense, especially on the right side, with enlarged cutaneous veins. An enormous swelling occupied almost the entire right half from the liver to the iliac fossa, reaching posteriorly to the lumbar region. It was uniformly hard with smooth outline, with a longitudinal sulcus in the mammillary line, moved slightly with respiration, and was not tender. There was no fluid in the peritoneal cavity. The urine contained traces of albumin, glucose, bile pigments, and a good deal of acetone and indican. Wassermann and cuti-reactions negative both in patient and in parents. Operation discovered a perfectly circumscribed, capsulated tumour continuous with the healthy hepatic tissue. The capsule was firmly adherent by a pedicle to the great omentum. The consistence of the tumour was hard and elastic, its colour varying from reddish-grey to greyish-white. Considering its relations it must have had its origin in the omentum; histologically, it was partly myxosarcoma and partly fibromyxoma. The child only survived twenty-four hours. Owing to the large size to which they may attain, such tumours may lose their peritoneal character and render the diagnosis difficult, which can only be cleared up by laparotomy. Tumours of mixed embryonic type are not rare in children and generally originate from the parenchymatous tissues, especially the kidney, but may also arise from the connective tissue stroma of the ligamentous attachments.

VINCENT DICKINSON.

Reviews.

THE DISEASES OF CHILDREN: A WORK FOR THE PRACTISING PHYSICIAN. Edited by Dr. M. PFAUNDLER, Professor of Children's Diseases and Director of the Children's Clinic at the University of Munich, and Dr. A. SCHLOSSMANN, Professor of Children's Diseases and Director of the Children's Clinic at the Medical Academy in Dusseldorf. English Translation by HENRY L. K. SHAW, M.D., and LINNÆUS LA FETRA, M.D. Vol. VII. Philadelphia and London: J. B. Lippincott Company. Price 21*s.* net.

This handsome and imposing book is volume vii of what must be regarded as the most exhaustive treatise on diseases of children yet written, and the series may justly be claimed as a truly encyclopædic work in pædiatrics. The volume under review deals with the diseases of the eye in infancy and childhood and disorders of speech and phonation in childhood, Dr. Oskar Eversbusch, of Munich, being responsible for the former, while the latter is from the pen of Dr. Max Nadoleczny, of Munich. The English translation has been ably and carefully carried out by Drs. Shaw and La Fetra, two eminent American physicians well qualified to undertake the work.

The first part of the volume is devoted to diseases of the eye in infancy and childhood, and the collection and discussion of these diseases in such a way serve to emphasise their importance at this period of life. The opening chapter takes into consideration congenital anomalies and deformities of the eye, while chapter ii deals with the development of the infantile eye, in the course of which many important anatomical details are given. The examination of children with ocular affections next receives attention. Though the chapter is an excellent one, and though many useful practical points are given, we are of opinion that the author might with advantage have discussed this question more fully. He has erred by too great condensation, and he evidently presupposes a practical working knowledge of various methods on the part of the physician. Apart from these points the chapter is good, and that the author fully realises the folly of too strict local examinations in eye work is indicated by his opening sentence in this chapter: "The examination is not restricted to the eyes, competent treatment of the latter requiring a thorough examination of the entire constitution." Thereafter are discussed affections of the eyelids, lacrymal organs, conjunctiva, cornea, etc. There is a chapter on anomalies of refraction and accommodation, while a special chapter is devoted to disturbances of pupillary movements. The various diseases and affections are discussed chiefly from the clinical point of view, very little pathology having been included. Treatment is dealt with at length, being very carefully and clearly set forth.

Part ii of this volume, as already indicated, is devoted to the consideration of disorders of speech and phonation in childhood—a branch of pædiatric work which often receives less attention than it deserves. The first chapter is on the psychology and physiology of the development of speech, and here the author follows very closely the researches of Meumann and Stern. As he very aptly remarks, an exact knowledge of the development of speech in children is an indispenable foundation for understanding and correcting lingual disturbances. He next considers lingual arrests of development, which he divides into three subgroups. First, there are peripherally impressive arrests, such as total or partial deafness, etc.; secondly, there may be central arrest of lingual development, rarely referable to sensory causes, this group including word-deafness, word-dumbness, various forms of functional stammering, etc.; and thirdly, there may be peripheral expressive arrests of lingual development, such as lisping and snuffling. Chapter iii deals with disorders of speech occurring on or after the period of advanced development. These are partly genuine disturbances of speech and partly symptomatic manifestations occurring in functional and organic affections of the nervous system. One of the most important sections in this chapter is that on stuttering, which is very fully discussed, treatment especially being minutely described. In this group also there are disorders of speech met with at puberty, those associated with chorea, epilepsy, and other nervous diseases, and those that are found in imbecility and in various organic diseases of the nervous system. An interesting chapter is that on disorders of the voice, while the importance and prophylaxis of disorders of speech and voice in school also receive consideration. In the concluding chapter so-called "congenital word-blindness" is discussed, and a bibliography (by no means complete) is appended in connection therewith. Part ii of this volume is well worth earnest study, and careful perusal should convince everyone not only that in this branch of medicine there is an ample field for painstaking and assiduous research, but also that much might be hoped for by the scientific treatment of these cases.

For the volume as a whole we cannot but express our high appreciation. There may be some points on which we do not see eye to eye with the authors, but that does not detract from the usefulness of the book. We think it would have enhanced the value of the book if references had been given when authors are mentioned. The volume is well illustrated, there being twenty-three full-page inserts in colour and black and nine coloured text illustrations, in addition to numerous figures in the text. The coloured plates have been exquisitely executed. The printing and binding are excellent, but the paper used seems unnecessarily heavy, rendering the handling of the volume rather arduous. The volume should appeal not only to the specialist, but also to the general practitioner for whom it was originally written. It is a standard work, and will, we think, remain so for many years to come. Medical men should feel much indebted to the gentlemen who have done the translation, and thus placed the work within the reach of a wider circle of readers. In conclusion, we have much confidence in bringing this excellent work of reference to the notice of all engaged in pædiatric work. J. A.

THE MEDICAL ANNUAL SYNOPTICAL INDEX TO REMEDIES AND DISEASES. Bristol: John Wright & Sons, Ltd. Price 8*s.* 6*d.* net.

FOR many years this JOURNAL has drawn attention to the value of the 'Medical Annual' to the profession as a whole, and to pædiatrists in particular, and we now accord a hearty welcome to the appearance of the present work, which forms an index to the volumes of the 'Medical Annual' from 1905 to 1914 inclusive. How well diseases of children are represented can be estimated by glancing at the references under the headings "children," "cholera infantum," "chorea," "infant feeding," "infectious diseases," "newborn (diseases of)," "milk," "rickets," and "syphilis (congenital)." Suggestions as to treatment are given in detail so as to obviate any necessity for further reference. An appendix contains an article on the metric method of prescribing, which is followed by a list of drugs giving the doses in imperial and metric measures in accordance with the British Pharmacopœia of 1914, and indicating the alterations which have been made.

A perusal of the work should convince the reader of the justice of the Editor's claim that it is practically an index to the medical literature of the last ten years.

The only criticism we have to offer is that which we have previously made in a review of the annual volume (*v.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1914, XI, *p.* 333), namely, that an authors' index would considerably add to the usefulness of the work. J. D. R.

THE

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Original Articles.

CONGENITAL HEART-BLOCK.

By T. R. WHIPHAM, M.A., M.D.Oxon., M.R.C.P.Lond.,

Physician to the Evelina Hospital for Children; Assistant Physician and Physician in charge of the Children's Department at the Prince of Wales's Hospital.

PRIOR to the introduction of the polygraph and the electro-cardiograph the existence of heart-block and other abnormal relations between the auricles and ventricles of the heart was not recognised. Cases of bradycardia were met with in the past in children as well as in adults, though rarely, it must be admitted, during early life. The cause of the slow ventricular beat, however, was not understood, neither was the fact realised that it was possible for the auricles and ventricles to contract at different rates. Heart-block is now an established fact, and it is known to occur in childhood as the result of acute infections such as pneumonia, diphtheria, and rheumatic fever, sometimes as a temporary condition, but at others leading to a fatal result. In such cases the change in the cardiac rhythm is brought about by a carditis which interferes with the function of the auriculo-ventricular bundle, or possibly in some instances by a degeneration of the nerve-fibres of which the bundle of His is composed.*

The occurrence, however, of heart-block as a congenital condition has not, so far as I am aware, been hitherto described, or at all events not proved by cardiographic methods. When present as a congenital anomaly heart-block is due to a pre-natal malformation of the heart which gives rise apparently to a defect in the development of the auriculo-ventricular bundle, and consequently to an interference with the normal impulses passing from the auricle to the ventricle. That this is the probable explanation of the condition is evident from a consideration of the two cases here recorded.*

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* Heart-block in acute rheumatic carditis.—A. E. Naish and A. Mills Kennedy, 'Lancet,' 1914, ii, p. 1242.

Case 1.—A female infant, aged 1 year and 6 months, who was admitted into the Evelina Hospital on March the 10th, 1914, suffering from whooping-cough and bronchitis. The child was born at full term after an instrumental delivery and was breast-fed for one year. She has always been backward: the first tooth was not cut until the age of nine months, and she did not sit up until she was a year old. She has never walked nor talked. There is one other child in the family whose heart is normal, and there have been no deaths or miscarriages.† The patient is a well-nourished, placid child, though small for her age. Her colour is good, but the hands and feet are at times cold; there is, however, no clubbing of the digital extremities. At no time has the child exhibited any cardiac symptoms, and it was only as the result of a routine examination that the condition of the heart was discovered. The pulse on admission was full, regular, and slow, and in spite of a slightly raised temperature due to the bronchitis, remained persistently between 56 and 64 in the minute. The respirations, on the other hand, were increased to an almost exactly similar rate, and when first seen the child presented the curious phenomenon of absolutely synchronous heart-beats and respirations. At times the respiratory rate was even quicker than the pulse, the former on one occasion being 68 and the latter 60 in the minute. The heart appears to be somewhat enlarged on the right side, but the apex is internal to the nipple line. A skiagram (Fig. 1) shows that the organ is almost globular in outline. Its action as felt and heard with the stethoscope is slow and perfectly regular and corresponds to the pulse, showing that all the ventricular beats reach the wrist. The rate is extraordinarily uniform for an infant; it does not vary to any appreciable extent with emotion, and at the time when the child had whooping-cough it was noted on several occasions that a paroxysm of coughing failed to cause any acceleration of the heart or more than the usual cyanosis. All over the præcordium a loud systolic bruit is audible, the maximum intensity being between the apex and the left sternal border and extending up to the pulmonary area. This is evidently produced by a congenital defect in the heart; otherwise the child shows no physical malformations. A blood-count showed a polycythæmia of 8,400,000 red corpuscles per c.mm., and the hæmoglobin value was 110 per cent.

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* Both these cases were shown before the Section for the Study of Disease in Children of the Royal Society of Medicine on November the 27th, 1914.

† Subsequently another child was born, and this also has a normal heart.

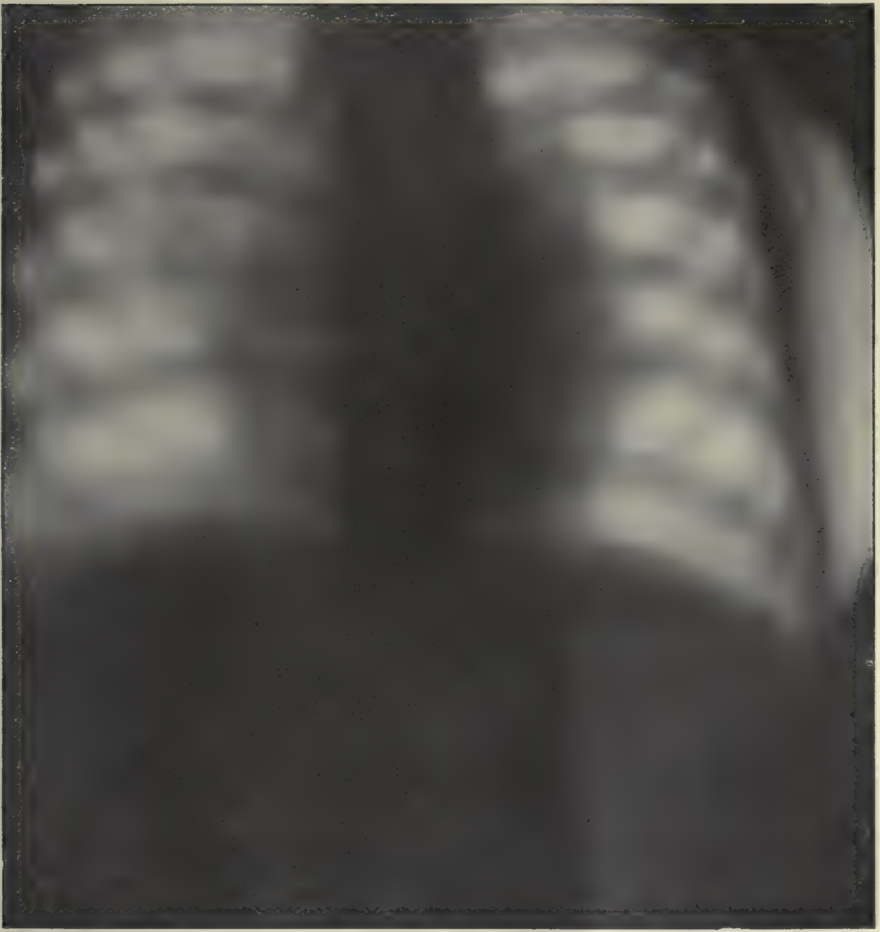

Fig. 1.—Skiagram of the heart (Case 1).

During the attack of whooping-cough the lowest pulse-rate noted was 52 and the highest 80, but after recovery the rate remained uniformly between 48 and 56 for a period of several weeks. The child was then found to have a nasal discharge which, on bacteriological examination, proved to be of a diphtheritic nature. She was consequently sent to a fever hospital, where she remained for nine weeks. On her return the pulse was found to be rather more rapid and averaged between 60 and 70 in a minute, though occasionally dropping to 52. This rate has continued ever since, and even during attacks of pneumonia and bronchitis it has not increased. The last time that the child was seriously ill was in November, 1914, when she was admitted into hospital with bronchitis. She then had a temperature rising to over 101° F. for a few days, but the pulse-rate remained almost uniformly 60.

The electro-cardiogram of the case is specially interesting. This was kindly taken for me by Dr. J. Parkinson and shows a perfectly regular 2 : 1 heart-block. Fig. 2 shows the curves obtained from lead I, and it will here be seen that the auricular summits, P, are twice as numerous as the ventricular curves, R and S ; the T summits are not in evidence. In those cycles where a ventricular beat normally follows an auricular, the P—R interval is normal, about one fifth of a second. Each of these cycles is followed by an auricular contraction, P, which fails to give rise to a corresponding ventricular beat, as is shown by the absence of R and S curves. There is instead an interval of nearly two and a half fifths of a second before the next auricular curve commences, which in this case is the usual interval between each P summit. The ventricular curves likewise are seen to occur at regular intervals of nearly one second. The heart is thus beating perfectly regularly, two auricular contractions to one ventricular, every alternate auricular impulse being blocked and failing to stimulate a corresponding ventricular contraction. This constitutes a 2 : 1 heart-block. It is further to be noted that the S curves in this lead are specially deep, a feature which is characteristic of right-sided hypertrophy.

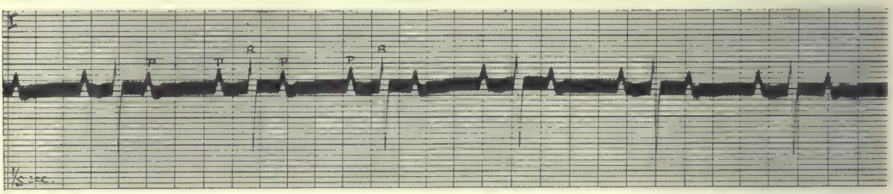

FIG. 2.—Electro-cardiogram (Case 1).

CASE 2.—A girl, aged 12 years, who was sent to me at the Prince of Wales's Hospital on June the 29th, 1914, by Dr. H. F.

Staunton. With the exception of measles at an early age she has had no illness. Six years ago it was first noticed by Dr. J. S. F. Weir that she had a slow pulse, but it was not until eighteen months ago that any cardiac symptoms occurred; since then she has complained of pain around the heart on exertion, and during the time that she has been under observation it has also been present during periods of rest. There are three other children in the family, all of whom are said to have normal hearts, but a maternal aunt is stated to have died suddenly from her heart at the age of 14. The patient is a well-grown girl and presents no cyanosis nor clubbing of the fingers. The pulse is slow, usually between 50 and 60 in a minute, and slightly irregular in rhythm; the extreme rates noted have been 40 and 64. On two or three occasions only the interpolation of little runs of three, four, or five quicker beats at the rate of about 80 per minute has been detected. The heart is of normal shape, but it is considerably enlarged, especially on the left side, as seen in a skiagram, and there is a heaving impulse visible in the fifth interspace well outside the nipple line. A systolic bruit is audible with its maximum intensity in the fourth interspace near the sternum, very similar in character but not quite so loud as that in Case 1; occasionally at the apex and a little outside a slight diastolic whiff has been heard, and the second sound in the pulmonary area is at times reduplicated. A blood-count showed no polycythæmia; the red corpuscles numbered 4,800,000, and the leucocytes 8000 per c.mm.; the hæmoglobin value was 80 per cent.

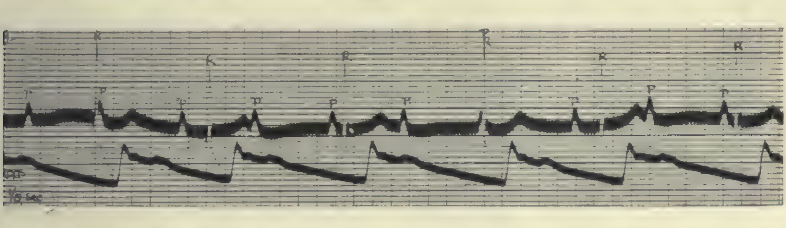

FIG. 3.—Electro-cardiogram (Case 2).

An electro-cardiogram and a polygraph tracing (Figs. 3 and 4), for which I am again indebted to Dr. Parkinson, both show a marked dissociation between the auricular and the ventricular beats, each of which appears to have an independent rhythm of its own. This is shown graphically on the scale below the jugular tracing in Fig. 4. A study of the electro-cardiogram (Fig. 3), which is taken from lead II, shows that the auricular beats, as indicated by the P summits, occur at intervals of approximately four fifths of a second.

The rhythm, however, is not quite regular, as the eighth auricular deflection does not occur until a full second after the preceding one. The ventricular beats are slower in rate than the auricular and decidedly more irregular, and occur every six or seven fifths of a second. The varying length of the ventricular diastole is easily seen in the radial tracings at the bottom of Figs. 3 and 4. Further evidence of the dissociation between the auricles and the ventricles is obtained by a comparison of the P—R intervals in the electrocardiogram. Thus the first R summit depicted occurs three and a half fifths of a second after the first P, and is followed immediately by another P which takes place before the completion of the first ventricular beat, the T summit of which is not apparent until nearly two fifths of a second later. The second P is not followed by a ventricular contraction at all, but after an interval of rather more than four fifths of a second a third P occurs. This is succeeded by an R summit, but at a longer interval than the normal one fifth of a second. Next come two auricular deflections, the first of which follows immediately upon the T summit of the preceding ventricular beat, while the second is followed almost at once by an R, less than a fifth of a second intervening. The sixth P summit occurs without a corresponding R, but the seventh auricular beat is seen to be synchronous with a ventricular, the P and R summits being superimposed. Similar features as regards the auricular and ventricular contractions are brought out by a comparison of the *a* and *c* waves in the polygraph tracing (Fig. 4).

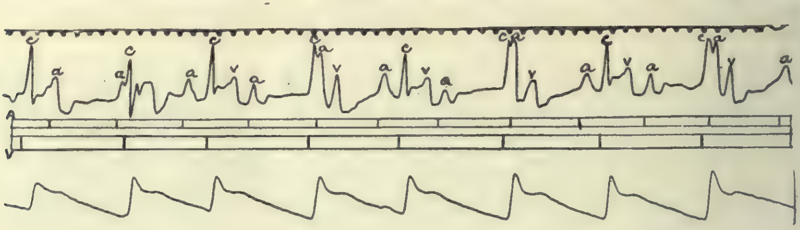

Fig. 4.—Polygraph tracing of the jugular and radial pulses (Case 2).

The cause of the irregularity of the heart-beat in this case is somewhat difficult to explain. The effects of respiration upon the cardiac rhythm have been observed, and no influence of the former upon the latter could be made out. Neither does the irregularity appear to be due to any other form of sinus arrhythmia, which results from an alteration in the vagal tone, as after the subcutaneous injection of atropin. sulphat. gr. $\frac{1}{60}$ the irregularity persisted, although the ventricular beats were increased by 20 a minute. It seems probable, therefore, that there is at times complete heart-block with pulse slow and regular, and at times incomplete heart-block of high grade (3 : 2, 2 : 1, and mixed), and that it is the latter which produces the irregular pulse.

Although there is a difference in the type of heart-block which is present in these two cases, yet they present several points of similarity. Both, I think, are undoubtedly of congenital origin, both have presented no cardiac symptoms with the exception of some pain around the heart complained of by the elder girl during the past eighteen months, and both have a congenital cardiac murmur, systolic in time, and heard most distinctly between the apex and the left border of the sternum. The murmur in both cases I attribute to an anatomical deficiency in the upper part of the inter-ventricular septum involving the path of the auriculo-ventricular bundle of His, and thus causing an obstruction to the passage of impulses from auricle to ventricle, with the result that a condition of heart-block is produced.

What the prognosis of congenital heart-block is I am not prepared to say, but to judge from the present condition of the elder girl it would appear to be not unfavourable for some years at all events. Hitherto the condition has produced in neither of my cases any marked cardiac disability, and it will be interesting, if they can be kept under observation, to watch the future of both these children.

Since my cases were first exhibited Zahorsky has reported * a case of bradycardia in an infant, aged 15 months. The child was small, poorly nourished, and of a cyanotic hue. The fingers were not clubbed, but the ends were of a dusky red colour. The pulse-rate was 54. The heart's apex was visible in the fifth interspace in the mammillary line, and a loud systolic murmur was audible all over the chest. The writer considers the case to be one of heart-block, but he does not appear to have proved it by cardiographic methods. The clinical features in this case are very similar to those presented by my own. It possibly is a case of heart-block, but actual proof is lacking.

THE OCCURRENCE OF ACIDOSIS IN CHILDREN.

By Edward Cecil Williams, M.B.Cantab., M.R.C.P.Lond.,
Physician, Royal Hospital for Sick Children, Bristol.

Acidosis is defined by Dr. Frederick Taylor in his 'Practice of Medicine' as the occurrence of certain organic acids in abnormal

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* 'Interstate Med. Journ.,' 1915, xxii, p. 57.

No.	Sex.	Age.	Urine.				Provisional diagnosis on admission.	Treatment.	Remarks, progress, etc.
			Reaction.	Albumin.	Sugar.	Acetone.			
1	M.	3 yrs.	+ + acid	—	—	+ +	? Cerebro-spinal fever	Sod. bicarb., pot. cit., and glucose per rectum	Temperature normal on admission. 102° F. at end of week. Vomited for 4 days before admission. Recovery complete. In hospital 27 days.
2	F.	4½ yrs.	Acid	—	—	+ +	Had eaten fried fish	Sod. bicarb.	Temperature 102° F. Very drowsy. Had vomited for 36 hours before admission. Recovery complete. In hospital 13 days.
3	F.	6 yrs.	Acid + +	Cloud	—	+ +	Had eaten cockles 2 days ago	Urotropine, sod. bicarb., pot. cit., and glucose per rectum	Very drowsy. Vomited 3 times. Delirious. Knee-jerks + +. Kernig present. Slight head retraction. Shivering fits and tremulous. Cerebro-spinal fluid under pressure. Joint pains. Very high temperature. Recovery complete. In hospital 21 days.
4	F.	$10\frac{10}{12}$ yrs.	Acid +	,,	—	+	As No. 3	As No. 3	As No. 3. In hospital 36 days.
5	F.	7 yrs.	Acid	,,	—	+	? Cerebro-spinal fever	No drugs	Had had a fit. Left knee-jerk absent. No Kernig. Drowsy. Recovery complete. In hospital 7 days.
6	M.	9½ yrs.	,,	—	—	+	,,	—	High temperature. Drowsy. Irritable. In hospital 27 days.

7	F.	7 yrs.	Acid + +	Cloud	—	+ +	? For 7 days, then signs of pneumonia	Sod. bicarb. and pot. cit. per rectum	Temperature high (105 ° F.). Remissions 6–7 °. Drowsy. Delirium. Complete recovery. In hospital 25 days.
8	F.	4½ yrs.	Acid	—	—	+	Unconscious. Temperature 101 ° F. Pulse 128–160. Respiration 40–56. Death	—	P.M. — Empyema; pericarditis; hæmorrhage into suprarenals. In hospital 1 day.
9	F.	6 yrs.	Acid + +	Yes	Yes	+ +	Thought to be diabetes, but sugar cleared up. Pneumonia developed, followed by empyema	Carbohydrate free diet. Sod. bicarb. and pot. cit. per rectum	Comatose. Breath smelt of acetones. Temperature high, with large remissions. Recovered. Still in hospital.
10	M.	4 yrs.	,,	No	No	+ +	Acidosis; sent in as dysentery; simulated intussusception	Sod. bicarb., glucose, and pot. cit. per rectum	Vomiting. Colicky pains. Blood and mucus by rectum, not mixed with fæces. Recovery complete. In hospital 8 days.
11	M.	3 yrs.	,,	Cloud	No	+ +	Acidosis, ? endocarditis	Sod. bicarb., pot. cit, and glucose per rectum	Very drowsy and irritable. Temperature high; marked remissions. Developed an apical systolic murmur. Still in hospital. Not nearly so drowsy.
12	M.	5 yrs.	,,	*Nil*	No	+ +	Pneumonia	Do.	Still in hospital. Convalescent.
13	F.	4 yrs.	,,	—	—	+ +	Ptomaine poisoning. Ice-cream 11 days before, followed by a rash	No milk; calomel	No diarrhœa or vomiting. Temperature 102 ° F.; marked remissions. Recovery complete.

amounts in the blood and urine. β-oxybutyric acid is the chief body present, diacetic acid and acetone being derived from it by oxidisation. There is no evidence to show that there is any essential difference between acidosis occurring during the course of diabetes and acidosis due to other causes, viz. phosphorus or opium poisoning, acute yellow atrophy of the liver, eclampsia, recurrent vomiting of pregnancy, and delayed chloroform poisoning. The acetone bodies so-called may originate from any or all of the three main classes of foodstuffs, but the balance of evidence goes to show that ordinarily they arise from the metabolism of fats, and in severe cases of diabetes from proteins as well. In several of the causes of acidosis given above, fatty or other changes have been found in the liver post mortem. In view of the importance of the early recognition of this condition I have tabulated the symptoms arising in thirteen cases which have come under my own observation during the present year, showing the varied forms of disease this condition may simulate.

Of these cases five cases occurred in boys, the remainder being girls. All the children were under eleven years of age and over three years of age. Three cases presented on admission symptoms suggestive of meningitis, but on examination of the cerebro-spinal fluid, which was under considerable pressure, showed no cytological changes nor organisms; examination of the urine, however, showed the presence of acetone and diacetic acid in varying degrees.

Two cases of mussel poisoning (mytiloxtoxin) and one case of ice-cream poisoning showed marked acidosis. In the two cases of mussel poisoning nervous symptoms were predominant, whereas in the ice-cream poisoning there was pyrexia with great remissions of temperature. In one case acidosis preceded pneumonia (for seven days) and in another case the acidosis occurred during the course of a pneumonia, and in a third case whose urine was found on admission to contain sugar, the sugar quickly disappeared, but the patient developed signs of pneumonia with acidosis which were followed by an empyema. In one case admitted in a practically moribund condition, the post mortem revealed suprarenal hæmorrhage. One case sent into hospital as dysentery suffered from vomiting, colicky pains in the abdomen, with blood and mucus, symptoms suggestive of an intussusception; the intense acidity of the urine and the quick response to treatment by alkalies showed the symptoms to be caused by acidosis due to some unknown cause. A child admitted into hospital very drowsy and irritable with a high temperature developed at the end of a week a systolic murmur. The urine on admission was very acid and contained acetones and diacetic acid (no salicylates were given); alkali treatment and glucose caused loss of drowsiness.

A study of the above cases shows how a multitude of causes may combine to upset the normal metabolism of a child and cause the symptoms of acidosis, and how, in some cases where there is no other obvious cause to guide one, the symptoms caused by the acidosis may lead one to an absolutely wrong diagnosis. It is therefore important in all cases of doubtful origin in young children that the urine should always be carefully examined for diacetic acid and acetones, as well as for the *Bacillus coli*.

Treatment consisted of bicarbonate of soda in doses up to ʒj hourly in an effervescent mixture and pot. cit. ʒss with glucose ʒj *per rectum* every four hours.

I wish to thank Dr. M. Esther Harding for the very careful notes taken on the above cases.

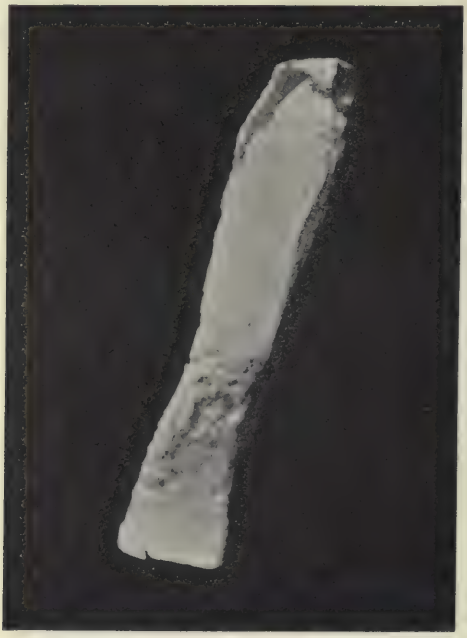
A CASE OF PRIMARY BRONCHIAL DIPHTHERIA.

By W. Mitchell Smith, M.D.,
Tean, Staffordshire.

The incidence of primary bronchial diphtheria is sufficiently rare to warrant publication of the following:

A girl, aged 13 years, was sent to the isolation hospital on April the 26th suffering from scarlet fever. The attack was not severe. The rash on admission was profuse, and on April the 29th a gland in the right side of the neck was enlarged. The temperature never reached 102° F., and was normal from May the 3rd onwards, except for slight irregular pyrexia between May the 13th and 21st. This was accompanied by earache and the recurrence of the swelling of the gland in the neck. From May the 22nd convalescence was uninterrupted, and the child was discharged on June the 5th. Her sister had also developed scarlet fever four days after the onset of the disease in the patient under consideration. There were no cases of diphtheria in the ward of the isolation hospital in which these patients had been treated. The girl was driven home, about six miles, in a motor. On June the 6th she was up and out in the garden in the morning. Between noon and 4.30 p.m. she began to feel ill, and was seen at midday on June the 7th. She was looking ill, pallor being particularly noticed. The points that especially attracted attention were that a short hacking cough which was unproductive occurred with great frequency and that she spoke in a whisper.

She had spoken in a similar manner during the acute stage of her scarlatina. There was no stridor and no difficulty in breathing. On examining the chest attention was immediately drawn to the fact that no breath-sounds could be heard over the right upper lobe anteriorly and that there was a marked diminution of breath-sounds over the corresponding area on the left side. On the posterior aspect of the chest the breath-sounds were not abnormal. The heart was not dilated. The fauces in particular were examined and no sign of any abnormality was detected. There was no nasal discharge. At this time the condition was regarded as the early stage of broncho-pneumonia, and treatment was ordered accordingly. At 10 o'clock in the evening of this day she complained of severe pain on the anterior part of the right chest, especially in the neighbourhood of the first rib. A mustard leaf was applied over this area, and shortly afterwards the child developed "croup" with marked dyspnœa. This continued until 3 o'clock next morning, June the 8th, when a cast was coughed up. This was sent to the Bacteriological Department at Birmingham University for examination, and the report was received that the specimen contained diphtheria bacilli.



The child was seen at midday on June the 8th, and in view of the appearance of the expectorated cast 4000 units of anti-diphtheritic serum were injected subcutaneously. An examination of the chest showed that the air entry over the right apex was much improved, but over the left apex breath-sounds were practically absent. The condition of the chest was unchanged on June the 9th, and a further injection of anti-diphtheritic serum (2000 units) was given. In the afternoon of June the 9th she complained of pain over the left side of the chest anteriorly, in a corresponding area, and again a mustard leaf was applied. A paroxysm of dyspnœa developed later, less intense than the former, following which another cast was expectorated which is seen in the accompanying photograph. After the expectoration of the second cast, convalescence generally was uninterrupted, and the signs in the chest rapidly disappeared. During June the 10th and 11th she coughed up a considerable quantity of mucus, which was white and frothy, and showed no sign of any organised membrane.

The two casts are similar, except that the second one presented at one extremity a lateral opening into which it may be assumed one end of the first cast was inserted. The external aspects of these casts presented a ragged irregular surface. The lumen was almost entirely occluded in its whole length with mucus, the consistency of which on the periphery was more dense than that in the centre of the lumen. The action of spirit on the cast was to give it a more dead white appearance than immediately after expectoration, while mucoid material from the inner aspect of the lumen was dissolved and disappeared. From the appearance of the casts and the physical signs of obstruction to the upper lobes, it would seem justifiable to assume that the membrane was formed at the bifurcation of the trachea and extended down the two main bronchi. The administration of serum probably inhibited the extension of the membrane down the subdivisions of the bronchial tree, the further spread being represented by mucus which was expectorated in the few days following the extrusion of the main membrane.

Literature on the subject of primary diphtheritic involvement of the trachea and bronchi is, so far as I can discover, not very extensive. The only account of the subject to which I have had access is an article by Drs. Robert Dawson Rudolf and A. McPhedran in the 'Transactions of the Association of American Physicians,' 1902, xvii, p. 378. In this paper preliminary remarks are quoted from the various text-books alluding to the subject. Without repeating the statements from the text-books it may be said that the general opinion is that primary diphtheria of the trachea and bronchi is rare, some authorities going so far as to say that it never occurs, and stating that where it is said to be found and is apparently primary, membrane has been present on the fauces or in the larynx but has not been detected. All authorities are agreed as to the extremely high death-rate of such conditions, but it should be remembered that these remarks were made prior to the introduction of diphtheria antitoxin. Since the employment of this serum a case has been recorded by Drs. Ewart and Hunt in which recovery took place. This case was slightly different from the case recorded in this paper. The tracheal and bronchial symptoms developed at the end of an illness lasting nearly three weeks, in which the symptoms were designated as those of "pulmonary catarrh" which was known to be diphtheritic. In this case there was temporary obstruction of the right bronchus and a series of tube casts of the trachea were expectorated. Large quantities of antitoxin had been employed.

The case recorded by Drs. Rudolf and McPhedran was one which had been treated in hospital for osteomyelitis for which an operation was performed on November the 1st, 1901. On the evening of November the 26th the patient appeared to have bronchial catarrh, and within a few hours was suffering from cyanosis and marked dyspnœa. Tracheotomy was performed with temporary relief. A culture taken at the time of the performance of the operation revealed a pure growth of Klebs-Loeffler bacillus. The larynx was examined five hours after the performance of tracheotomy, and no abnormality was detected. Antitoxin was used freely, and quantities of membrane came away through the tube. The child, however, died on November the 29th, and no post-mortem examination was permitted. Death was apparently due to asphyxia.

In the present case there was certainly no faucial membrane, and the early symptoms contra-indicate the commencement of the membrane in the larynx followed by extension down the bronchus. The initial symptoms strongly suggest that the disease when first seen was situated in the bronchi, causing deficient air entry into the upper lobes of both lungs. The characteristics of the membrane also suggest that it was sharply limited to the bifurcation of the bronchi and their immediate neighbourhood and did not extend further into the trachea. It is interesting to note that the second piece of membrane was extruded more easily than the first, this being probably the result of the early administration of antitoxin. The only point common to these cases is that the condition occurred after a prolonged illness and in the female sex.

LYMPHANGIOMA OF THE CONJUNCTIVA.

By Euphan M. Maxwell, M.B.,
Assistant Surgeon and Curator, Royal Victoria Eye and Ear Hospital, Dublin.

The following two cases of lymphangioma of the conjunctiva came under my notice during the latter half of last year.

Lymphangioma involving the conjunctiva alone is not of great rarity, but where it also affects the orbit, as seems probable in one of these cases, it is exceedingly rare.

It is generally stated that the predisposition to lymphangioma is present at birth, but that the growth of the tumour is very gradual. That this appears to have been the case in both these patients will be seen from their histories.

The first case is that of a girl, aged 3 years. Her parents brought her to the hospital in December, 1914, having noticed for the past year that the lower half of the right eye seemed more raised than the other.

That its appearance was never quite normal is obvious from their statement that the child had "had a cold in the right eye since birth." The mother subsequently told me that at the age of 1 year, she noticed a lump on the right side of the child's forehead, which swelled up whenever she had a cold, a yellowish discharge appearing in the eye at the same time.

On examination, the whole lower half of the right conjunctiva bulbi was seen to be raised in a greyish semi-translucent mass, which pitted on pressure with a probe. There was a slight swelling on the forehead situated over the right frontal sinus and giving a boggy feel on palpation ; there was no obvious connection between it and the conjunctival swelling.

The child having been admitted to the hospital, a piece of the conjunctival growth was removed for microscopical examination. The section examined showed numerous empty spaces lined by endothelium. Here and there in the connective tissue between the spaces were to be seen a few small round cells. The conjunctival epithelium appeared normal or slightly thickened.

Within a few hours of the removal the whole tumour became diffused with blood and assumed a bright red colour. The child was now taken from hospital by the parents, but was soon brought back with a purulent discharge from the conjunctiva.

In the meanwhile the growth had increased and now involved the inner half of the conjunctiva bulbi as well as the lower half.

It was then decided to treat the conjunctival growth by electrolysis. A needle was attached to the negative pole of the battery and inserted for about half a minute into the growth. The strength of the current employed was about 4 to 6 volts.

This was to have been repeated every ten days, varying the site of insertion, but the treatment was interrupted by the child developing bronchitis. She was then lost sight of until August of this year. At this last examination I noticed no further increase in the tumour, which still remained red in patches. At the lower limbus the uniform margin of the growth had disappeared, a few limpid vesicles overhanging the cornea in this area. The parents refused any further treatment of the conjunctiva or any examination of the frontal sinus which had been recommended.

The second case, a girl, aged 3½ years, was first admitted to the hospital in August of last year. Her parents gave a history of having noticed a protrusion of the left eye since she was ten months old. On examination, the conjunctiva bulbi showed a similar appearance to that described in the last case in its upper and inner quadrant. In addition, the eye was found to be proptosed downwards and outwards to the extent of 3 mm.; motion inwards was limited.

The orbit was explored from the outer side following Krönlein's method, but nothing abnormal was seen or felt. An exploration was attempted at the inner side, and the growth appeared to go back indefinitely into the orbit.

A piece removed for microscopical examination showed similar appearances to the last case.

In November the patient underwent a course of electrolysis on the lines above mentioned. She received four applications at intervals of ten days. At the end of this time the proptosis had diminished by 1 mm. and the conjunctival condition had improved. She went home in January and returned to the hospital in July of this year. On examination, it was found that the proptosis had not further diminished. The superficial part of the growth had now become so hard wherever it had been electrolysed that further insertion of the needle was rendered very difficult. A subconjunctival resection of as much of the growth as possible was the course then adopted. The child has now gone home to be sent back to hospital again in a few months.

The question of treatment in such cases is not an easy one to decide. Excision in the conjunctival area can only be undertaken subconjunctivally, and this is a difficult matter with such an indefinite mass to deal with.

In the second patient an attempt was made to establish superficial drainage by making multiple incisions into the tumour, but this proved quite ineffectual.

Most authors are unanimous in recommending electrolysis. This acts presumably by setting up an inflammation, which is followed by the formation of contracting connective tissue. This treatment is easy enough of accomplishment in the superficial parts of the tumour, but is not very practicable where it recedes back into the orbit.

I have to thank Mr. Story and my father for their kindness in allowing me to publish these cases.

Postscript.—Since writing the report of these cases, I have read with interest Mr. Mackay's article in the 'Transactions of the Ophthalmological Society' for 1915, entitled "A Note on Lymphangioma of the Orbit treated with X Rays."

The success he achieved will assuredly encourage others to give this method a trial.

Société de Pédiatrie, Paris.

June the 9th, 1914. *Bulletin No.* 6.

Acute Encephalitis in Children.—M. Comby was of opinion that this disease was more frequent than was thought. Before lumbar puncture became common as a diagnostic measure it was never recognised, but now a diagnosis could be made between meningitis and encephalitis. In the former the cerebro-spinal fluid, whether clear or turbid, always contained abundant leucocytic elements; in the latter they were absent. The discussion was continued by MM. Guinon and Dufour.

Hæmorrhagic Conditions in late Childhood.—MM. Triboulet, Rolland, and Buc reported a case of a girl, aged 9 years, who had severe recurrent hæmorrhages treated by radiotherapy, enemata of Witte's peptone, injections of chloride of calcium, emetin, antidiphtheritic serum, and splenic extract without benefit. The pathology of such cases was unknown.

Hæmokonia and the Bile Salts and Pigments in the Urine.—MM. Nobécourt and Maillet made observations in eleven cases to ascertain what relation existed between the quantity of blood dust and biliary elements in the urine. In the majority of these cases they found that no definite relationship existed.

Adenitis of the Iliac Fossa simulating Coxalgia.—M. Savariaud reported two cases which showed that the signs in favour of adenitis were absence of pain at night and on walking, diminution of lameness by exercise, absence of limitation of movements of abduction and rotation, absence of pain on pressing the posterior part of the articulation, and absence of osseous changes by radioscopy.

Results of Feeding Sick Children on 10 per cent. Saccharose.—MM. Nobécourt and Nadel reported 30 cases comprising vomiting, cachexia, acute and subacute gastro-intestinal affections and other ailments. In vomiting infants this feeding usually caused diminution and sometimes cessation of the vomiting, but this action was not constant, and when it existed was not always lasting. In cachexia and hypotrophy, of whatever origin, saccharated feeding was generally well tolerated and often produced a rapid and continuous increase of weight. In one case only the urine contained glucose, and acetone was invariably absent. In gastro-intestinal affections sugar was well tolerated whether given with water, rice-water, buttermilk, milk, or vegetable broth. The digestion of sugar in infants with other ailments was normal; large doses seemed at times to have a favourable action on the course of the disease. "Sugar fever" was never observed.

Intolerance of Farinaceous Food in an Infant of 10 months.—MM. Nobécourt and Philippon. The stools were liquid and frothy with an odour of acid fermentation. Examination revealed the presence of starch granules imperfectly digested and of iodophile yeasts, while Schmidt's fermentation test was strongly positive. The child displayed a remarkable tolerance for sugar.

Researches on Alimentary Diseases due to Defect.—MM. Weill and Mouriquand related their experiments in producing beri-beri in pigeons by feeding with decorticated barley.

Reduction of Congenital Dislocation of the Hip before the Second Year.—M. Lange showed two cases operated on at the ages of 13 and 15 months who had walked well after five and six months respectively. He thought these results should encourage perseverance in the rule to reduce their dislocations as soon as diagnosed.

Congenital Labial Hemispasm and Malformation of the Ears.—MM. G. Variot and F. Cailliau described two cases with autopsies. In both the lesions consisted in a rarefaction and marked atrophy of the muscular fibres with destructive and retrogressive changes. The depressor anguli oris, levator menti, and buccal muscles of the affected side showed no alteration. This explained the fact that when the orbicularis on one side was absent or atrophic the contracture of these muscles induced the characteristic spasmodic grimace. The lesion was most marked in the case where it existed with a double malformation of the ears.

Exophthalmic Goitre in a Child of 8½ years.—MM. Sonnié-Moret and Saison reported this case, which was of interest not only from the age of the patient, but also from the disease having been apparently provoked by an attack of measles. Both parents had suffered from vaso-motor trouble and palpitation.

Meningitic Syndrome supervening on Varicella in an Adenopathic Child.—MM. Guinon and Halbron related the case of a boy, aged 4 years, who, during cerebral symptoms which resembled those of tuberculous meningitis, developed paralysis of the muscles of the right half of the palate and lips of the same side. The dysphagia resulting from this paralysis was complicated by anorexia and vomiting probably of reflex origin. All this happened during the eruption of a varicella with an acetonemic syndrome. Recovery was perfect. The cuti-reaction was persistently negative.

VINCENT DICKINSON.

Abstracts from Current Literature.

Tuberculosis.

Congenital tuberculosis (*'Arch. de Méd. des Enf.,'* 1914, XVII, *p.* 721). —**Péhu** and **Chalier** have collected from literature 16 undoubted cases which have been published since or were not included in their last paper on this subject (*v.* BRITISH JOURNAL OF CHILDREN'S DISEASES, 1908, V, *p.* 454). In 12 of these there were naked-eye lesions, and in 4, including Deléarde's case (*ibid.*, 1913, X, *p.* 547), there were no microscopic lesions, but tubercle bacilli were present or animal inoculation was positive. They reject the cases of Zarfl (*ibid.*, 1913, X, *p.* 175) and Repaci (*ibid.*, *p.* 547), as the possibility of acquired tuberculosis could not be excluded. They conclude that authentic cases of congenital tuberculosis are very rare. There are only 51 on record. The conditions under which they occur are always the same. They appear during or at the end of pregnancy when the placental circulation is established, and result from a bacillæmia which is usually a terminal event. They should therefore be regarded as examples of transplacental heredo-contagion, and not of direct heredity. J. D. ROLLESTON.

Inheritance of tuberculosis (*'Arch. de Méd. des Enf.,'* 1915, XVIII, *p.* 1. —**Péhu** and **Chalier** summarise their paper as follows: (1) The dystrophies sometimes observed in the children of the tuberculous have no specific character. (2) It is not proved that there is a special hereditary disposition for tuberculosis. The descendants of the tuberculous offer a soil suitable for all diseases and not specially for tuberculosis. (3) It has not been proved that there is an hereditary immunity to tuberculosis. (4) The transmission of the tubercle bacillus from parents to offspring by the spermatozoon or the ovum has not been established. (5) Transplacental heredo-contagion exists, but owing to its extreme rarity this mode of propagation of tuberculosis has a very restricted importance. (6) It is in the infected environment in which they live that the children of the tuberculous become contaminated. Rational prophylaxis will protect them from the disease. J. D. ROLLESTON.

Tuberculosis as a disease of the new-born (*'Amer. Journ. Dis. Child.,'* 1915, IX, *p.* 322).—**C. G. Grulee** and **F. Harms** review the literature and record a personal case. A child was born of a mother whose history was negative except for an old tuberculosis of the hip, apparently healed. He was born apparently at term and appeared healthy, but fifteen hours after birth he had a high temperature, which continued irregular until death on the eleventh day. There was a tendency to regurgitation, and on the seventh day generalised convulsions occurred, which lasted till twenty-four hours before death. The only physical signs were an enlarged liver and spleen. The necropsy showed a generalised tuberculosis chiefly affecting the abdominal organs, especially the peri-portal lymph glands, liver, and spleen. The tuberculosis was miliary in type, but the stage of the tubercles suggested that the disease had already begun *in utero*. Many tubercle bacilli were found in all sections of the tuberculous areas. The mother survived. J. D. ROLLESTON.

Transmission of tuberculosis in childhood ('*Arch. of Ped.*,' 1915, XXXII, *p.* 485).—**W. H. Park.**—Intra-uterine affection occurs in children born to mothers affected with miliary tuberculosis. About 24 per cent. of cases in young children are infected by the bovine variety of tubercle as compared with 1·5 per cent. of adults. About 16 per cent. of all milk samples taken in New York contain the tubercle bacillus. Bacilli may be present even when the udder is normal. In the certified herds less than 5 per cent. of the cows react to tuberculin, and only about ½ per cent. had more than a slight localised tuberculosis. Pasteurisation destroys the tubercle bacillus in milk. In butter the organism may live for as long as five months, but it usually dies within a few weeks. Little is known as to the infecting power of butter or meat containing tubercle bacilli. The human source is, however, the main factor in causing the disease. Clinical tuberculosis is commoner among the children of the tuberculous than among those who are free from the disease. CHRISTOPHER ROLLESTON.

The incidence of tuberculosis in childhood ('*Journ. State Med.*,' 1915, XXIII, *p.* 44).—**A. P. Mitchell** investigated the prevalence of tubercle bacilli in the Edinburgh milk supply, and as a result formulates the following general conclusions: (1) The high incidence of tubercle bacilli in milk imported to Edinburgh from country districts clearly points to the necessity of measures more stringent than those at present enforced being taken to prevent tubercle-infected milk reaching the public. (2) The danger from infected milk in Edinburgh cannot be regarded as other than serious in view of the prevalence of bovine infection of children. The only way to safeguard the public against this danger is for the local authority without further delay to grapple with the existing inadequate supervision of the milk supplied to Edinburgh from rural districts. The existing local powers should be exercised to their full extent, a sufficient staff of veterinary inspectors established, and a systematic bacteriological examination of the milk provided for. (3) The provision of legislation for the whole country is very desirable in view of the inadequacy of the powers at present vested in Scottish local authorities. (4) Until the necessary measures have been introduced it is advisable for the public to boil all milk consumed in their families. J. ALLAN.

Tuberculosis in childhood ('*The Polyclinic*,' 1915, XIX, *p.* 53).—**T. N. Kelynack** does not consider cutaneous reactions by von Pirquet test and others of much value. He discountenances the use of tuberculin. He does not believe in the indiscriminate diagnosis of hilum disease, and considers that glandular enlargement is frequently due to streptococcal or other non-tuberculous infection. He disapproves of extensive operations on tuberculous glands for fear of general involvement. F. R. B. ATKINSON.

A study of tuberculous lesions in infants and young children based on post-mortem examination ('*Amer. Journ. Dis. Child.*,' 1914, VII, *p.* 362).—**M. Wollstein** and **F. H. Bartlett.**—From July 1, 1908, to April 1, 1914, 1320 autopsies were performed at the Babies' Hospital of New York City. Of these 178, or 13·5 per cent., showed tuberculous lesions. Their ages ranged from 2½ months to 5 years. There was no instance of congenital tuberculosis. The cases were divided into pulmonary and intestinal groups according as the predominant lesions were in the lungs or bronchial glands or in the intestine and mesenteric glands. I. Pulmonary group: (1) Tuberculous lesions limited to bronchial glands. Five cases in infants aged from 17 to 27 months. The lesions were active in each case. (2) Tuberculous lesions involving bronchial glands and one other organ: (*a*) lung, 2 cases; (*b*) pia mater, 1 case; (*c*) finger, 1 case. (3) Tuberculous lesions involving lungs and bronchial glands as the most advanced lesion of a more or less generalised tuberculosis. The great majority of cases, *i. e.* 134 out of 178, were examples of primary pulmonary infection with markedly generalised tuberculosis by way of the blood. Calcareous degeneration was found only 5 times in the lungs and 13 times in the bronchial glands. In no case, however, was the tuberculous lesion entirely calcified or encapsulated. Pulmonary cavities were found in 43 children, 31 cavities being in the right and 20 in the left lung. Pulmonary hæmorrhage did not occur in any case. II. Intestinal group: (1) Tuberculous lesion limited to mesenteric glands, 1 case. (2) Tuberculous lesions limited to the intestine and to the mesenteric and cervical glands, 1 case. (3) Tuberculous lesions of the intestine and mesenteric glands as the oldest lesion in a generalised tuberculosis, 17 cases; 65 per cent. of these were beyond the nursing stage, whereas in only 55 per cent. of the cases of respiratory infection were the children over 1 year old. There were only 14 cases out of 178 in which the lungs were not involved and only 9 in which the bronchial glands escaped. The mesenteric glands were the seat of tuberculosis in 113 cases. Tuberculous meningitis occurred in 69, or 38 per cent., 28 of whom were in the first year, and 22 in the second year; 3 cases were of intestinal origin. Younger infants had a larger number of viscera involved, while older children showed a more localised infection. The smaller proportion of cases of tuberculous meningitis in children infected by ingestion as compared with those infected by inhalation is in keeping with the fact that the deglutition cases show less tendency to generalisation than the respiratory cases.

J. D. Rolleston.

Primary tuberculous bacillæmia in infancy ('*Le Nourrisson,*' 1915, III, *p.* 125).—**A. Jousset.**—A guinea-pig inoculated with the tubercle bacillus soon develops septicæmia, the primary nature of which is proved by the absence of naked-eye and microscopic lesions. A similar bacillæmia occurs in infants. Jousset records 6 cases in patients aged from 8–15 weeks, and 2 in infants aged 6–7 months, in whom the diagnosis of gastro-enteritis, athrepsia, infantile diarrhœa, debility, etc., had been made, while they were really suffering from tuberculous bacillæmia. The primary nature of the septicæmia was proved by the absence of lesions post mortem. Tuberculin tests are more often negative than positive in such cases, but an obstinate diarrhœa and a loss of weight out of proportion to the intestinal condition are suggestive.

J. D. Rolleston.

Tuberculous cervical adenitis in children ('*Clin. Journ.,*' 1915, XLIV, *p.* 41).—**J. Fraser.**—An examination of 300 cases of children under 12 suffering from this condition showed that 10 per cent. occurred during the first year. A third of the cases occurred from 2–4 years. The glandular enlargement was frequently preceded by one of the exanthemata, especially measles. The younger the child when the disease appears, the more serious is the prognosis. Disease of the upper glands is less dangerous than disease of the lower. Treatment by tuberculin should only produce focal reactions. Mehnarto's serum gives promising results. Operation should be avoided, if possible, before the age of 2, and also if there is no caseation.

F. R. B. Atkinson.

Pulmonary tuberculosis with laryngo-pharyngeal stenosis ('*Pediatrics*,' 1915, xxvii, *p.* 320).—**D. S. Wilson.**—A boy, aged 16 years, had primary pulmonary tuberculosis, with secondary involvement of the larynx and pharynx. The disease progressed until adhesions between the base of the tongue and epiglottis reduced the aperture through the pharynx and larynx to about the size of an ordinary lead pencil. Swallowing became impossible, liquids being regurgitated through the mouth and nose, and he was fed by rectum for some time. The respiration became seriously impeded, and the sound produced by his breathing could be heard at a considerable distance. Wassermann's reaction was negative. Tracheotomy to be followed by gastrostomy was recommended, but death occurred ten minutes before the operation. J. D. Rolleston.

Notes on a case of broncho-alveolitis ('*Arch. de Méd. des Enf.*,' 1915, xviii, *p.* 440).—**H. Barbier** describes a case in an infant, aged 3 months. The autopsy showed a congested lung studded with tubercles and a caseous bronchial gland. An intense alveolitis was found microscopically with an amorphous exudate consisting of disintegrating alveolar cells containing enormous numbers of tubercle bacilli. There were no other tuberculous lesions. The infection must have been air borne.

Christopher Rolleston.

The significance of certain areas of thoracic dulness in children ('*La Pediatria*,' 1915, xxiii, *p.* 163).—**S. Maggiore** examined 37 children who all gave a positive tuberculin reaction, and recorded the presence of an area of dulness in the supra- and infra-spinous fossæ in 22 instances on the right side and in 15 on the left. In 28 there existed more less marked evidence of tracheo-bronchial adenopathy. Radioscopy showed in only four instances any shadow in the upper pulmonary lobes, and in all these four cases moist sounds were heard on auscultation. Of four cases in which there was an autopsy, in one, in which moist sounds had been present, the lung was healthy, but there were enlarged caseous glands in the region corresponding to the dulness. In the remainder, including those who gave clinical evidence of adenopathy, radioscopy afforded evidence of enlarged peribronchial glands on the same side as the dulness. The conclusion arrived at by the author is that apical dulness in children who react to tuberculin is due in the majority of cases to tracheo-bronchial adenopathy, even when moist sounds exist. Vincent Dickinson.

A case of tuberculous cardio-cirrhosis ('*La Pediatria*,' 1915, xxiii, *p.* 134).—**De Stefano** reports the case of a child of ten years, who for two years had suffered from febrile symptoms and headache, followed by abdominal swelling, and for one year from convulsive attacks, strabismus, and tonico-clonic contraction of the muscles of the trunk and limbs repeated at long intervals. On admission there was cyanosis, an enlarged and hard abdomen, a spleen just palpable, a prominent precordial region with palpable but not visible apex beat, and increased precordial area of dulness. The bases of both lungs were dull, with weak vesicular murmur and absence of vocal fremitus. There was also dulness in the right supra-spinous fossa with weak inspiration. Drowsiness, increased patellar reflex, positive cuti-reaction, Wassermann negative. Autopsy showed polyserositis, universal pericardial adhesions, nutmeg liver, tuberculous mass in right occipital and parietal lobes the size of an orange, and three nodules the size of nuts in the right frontal and parietal lobes. In this case, which may be considered one of polyserositis causing pericardial adhesions and nutmeg liver, the nervous symptoms were few. VINCENT DICKINSON.

Tuberculosis of the liver in an infant, aged 3 months (*'Arch. de Méd. des Enf.,'* 1915, XVIII, *p.* 437).—**H. Barbier.**—In children of tuberculous parents fatty degeneration of the liver cells is accompanied by an intra- and extra-lobular sclerosis. The liver becomes smaller. A child, aged 3 months, born to a tuberculous father, was brought to hospital with signs of acute bronchitis, cough, fever, vomiting, and anorexia. On obduction the liver was small and yellow, and dotted throughout with small miliary granules, peri- and intra-lobular caseous tubercles with diffuse hepatitis in between with areas of cellular necroses indicating a widespread distribution of the bacillus. The nodules contained very large numbers of tubercle bacilli.

CHRISTOPHER ROLLESTON.

The pre-operative diagnosis of tubercular mesenteric and retroperitoneal glands (*'Boston Med. and Surg. Journ.,'* 1915, CLXXII, *p.* 253). —**E. H. Risley** finds the diagnosis commonest between the ages of 6 and 8 years, and recognises two clinical types: (*a*) distinctly palpable masses of glands accompanied by no or only vague abdominal symptoms; (*b*) cases with marked abdominal signs with no palpable glands. There may be no symptoms even in the presence of palpable glands, or the condition may be discovered only on operation, as the glands are too small to be felt. On the other hand, the symptoms may be a slight and fleeting abdominal pain; in other cases the pain may be localised in the cæcum, and lastly the onset may be sudden or gradual with all the signs of obstruction. The prognosis in the subacute stage is good without operation. In the acute stage an exploratory laparotomy should be performed, but the glands should not be removed unless there are adhesions, ulceration or mechanical obstruction.

F. R. B. ATKINSON.

Tuberculous vaginalitis in children (*'Riv. di Clin. Pediat.,'* 1915, XIII, *p.* 347).—**G. Pieri** from a study of five cases states that tuberculous vaginalitis occurs without being preceded or followed by clinical manifestations of tuberculous infection of the peritoneum. In cases with coexisting tuberculous peritonitis the vaginalitis is revealed in the form of a secondary symptomatic hydrocele, while in apparently primary forms it shows itself by the presence of nodosities of varying size—hard, irregular, and painless—in the substance of the peritoneal canal. In inguinal hernia in which palpation reveals the presence of irregular nodosities of doubtful interpretation, tuberculosis of the sac should be borne in mind. Tuberculous vaginalitis in children has a marked tendency towards spontaneous cure. Operations on hernias in which the co-existence of tuberculous vaginalitis is suspected should be avoided since there is a risk of making an incomplete operation or having to resect the cord or testicle. The cure of the tuberculous process should be awaited before undertaking the radical cure of the hernia.

VINCENT DICKINSON.

Hemiparesis and hemiplegia as an early symptom in tuberculous meningitis ('*Arch. of Ped.*,' 1914, xxxi, *p.* 607).—**P. S. Chancellor** describes the case of a female child, aged 3 years, in whom the above signs appeared early after the onset of convulsions. He quotes other instances from the literature. F. R. B. Atkinson.

Hemiparesis and hemiplegia as early symptoms of tuberculous meningitis ('*Arch. of Ped.*,' 1914, xxxi, *p.* 902).—**L. W. Sauer** describes two cases in children in whom paresis rapidly developing into paralysis were the first symptoms of an existing meningitis. The diagnosis was proved on autopsy. F. R. B. Atkinson.

The cuti-reaction in experimental tuberculosis ('*Riv. di Clin. Pediat.*,' 1915, xiii, *p.* 330).—**E. Orsi-Battaglini** conducted nine series of experiments, viz. endoperitoneal injection of emulsion of tuberculous meningeal effusion, of caseous material from a tuberculous guinea-pig, of the same from a tuberculous gland of a child; injection of emulsion of pure culture of human tubercle into the medullary cavity of the femur; intraperitoneal and intravenous injection of attenuated human tubercle bacillus and of dead tubercle bacillus. He found that the reaction took place equally whatever be the infecting tuberculous matter, whatever its degree of virulence, and even if consisting of dead tubercle bacilli. The reactions had no relation to any definite period of development of the specific anatomical lesions, but to the presence in the circulation of tuberculous toxins, whether products of the vital activity of the tubercle bacillus in the affected organs, or contained in the culture plates, or set free by slow disintegration of the dead bodies of the bacilli. The time of appearance varied; most commonly it was observed from fifteen to twenty days from the date of infection. Precocious reactions on the fifth to seventh day took place when the material (dead bacilli, old cultures) or the mode of inoculation were such as to throw the toxins immediately into the circulation, while on the other hand retarded reaction (sixty-seventh day) was caused by bacilli of feeble virulence, and localised in organs, such as glands, where they were able to exert their pathogenic influence only in a minor degree. In generalised and acute forms the reaction was either absent or very slightly marked, as was also the case in chronic forms approaching a fatal issue. Vincent Dickinson.

The significance of the von Pirquet test ('*Med. Record*,' 1915, lxxxvii, *p.* 57).—**W. T. Frazer** states that the number of children reacting to this test is less than stated by von Pirquet and others. Shaw and Laird, in a series of 330 children, found the average of positive reactions to be 28 per cent., increasing from 2½ per cent. under 2 years to 45 per cent. between 6 and 14. Sachs, in a series of children of tuberculous parents, obtained a positive reaction in 49 per cent. between 7 and 14 years, 60 per cent. between 15 and 20, and 73 per cent. above the age of 20. Wachenheim, investigating Jewish children, found that all clinical cases of tuberculosis reacted; 24 doubtful cases under 6 gave no positive reactions, in 36 children between 6 and 9 there was a percentage positive reaction of 5·6, while in 20 children over 10 only 15 per cent. reacted. This author concludes that most children that look tuberculous are free from the disease. Frazer's own figures are few; of 36 children tested, 8 were under 7 and were all negative, 28 between 7 and 14 gave eight reactions, a percentage of 28. The following technique is recommended: Pure tuberculin should be injected by a von Pirquet scarifier into the skin of the forearm previously cleansed with ether. A drop of glycerine should be used for the control. All reactions below 5 mm. should be ignored. The author's conclusions are: (1) a positive reaction is less frequent than is commonly thought, the former high percentages were due to the material being derived from the poor and infected; (2) a reaction occurring up to the age of ten is suspicious; (3) a negative reaction negative on repetition is valuable evidence of the absence of tuberculosis. Christopher Rolleston.

The cutaneous tuberculin test in children of non-tuberculous parentage (*'Arch. of Ped.,'* 1915, xxxii, *p.* 20).—**M. Fishberg** alludes to his recent study of the child in the tuberculous milieu (*v.* British Journal of Children's Diseases, 1914, xi, *p.* 419), and records the results of von Pirquet's test in 588 children under 15 years living in the tenement district of New York City, in whose homes was no known actively tuberculous person. 52·72 per cent. gave positive reactions. During the first year of life the proportion of "reactors" was small (4·54 per cent. under 6 months, and 14·71 per cent. between 6 and 12 months). From 1 to 2 years of age, 33·33 per cent. reacted; between 3 and 4, 41 per cent.; between 5 and 6, 50 per cent.; between 7 and 10, 64·74 per cent.; between 11 and 14, 69·4 per cent.; and at 14, 75 per cent. J. D. Rolleston.

Cutaneous regional variation in the Pirquet reaction (*'Arch. of Ped.,'* 1915, xxxii, *p.* 92).—**J. A. Colliver** investigated how the different parts of the body reacted to the von Pirquet test. The parts of the body tested and the results are shown in the following table.

Part of body.	Traumatic reaction.			First appearance of a positive reaction.			Greatest intensity of reaction reached.		
	None.	Small.	Large.	Less than 24 hrs.	Between 36 and 48 hrs.	More than 48 hrs.	24 hrs.	Between 36 and 48 hrs.	Over 48 hrs.
Hand (dorsum)	15	33	2	42	8	0	3	31	16
Foot (dorsum)	18	30	2	46	4	0	2	14	34
Knee . .	26	22	2	39	10	1	1	31	18
Shoulder. .	6	32	12	47	2	1	3	33	14
Neck, near vertebra prominens .	8	40	2	50	0	0	7	35	8
Back (sacro-iliac region).	5	30	15	47	2	1	3	31	16
Forearm .	7	41	2	46	3	1	3	34	13

F. R. B. Atkinson.

Positive skin tuberculin reactions in children (*'Boston Med. and Surg. Journ.,'* 1915, clxxii, *p.* 161).—**O. F. Rogers, jun.,** inquired into the subsequent history of 69 children who had given a positive von Pirquet's reaction while in the Massachusetts General Hospital and had been discharged for at least one year and not more than four years. He found that a positive reaction before the age of two indicated that life was likely to be short, and that the mortality among all children up to the age of ten with a positive reaction was much higher than that of normal children.

J. D. Rolleston.

Care of the tuberculous child (*'Arch. of Ped.,'* 1915, xxxii, *p.* 490).—**I. O. Woodruff** lays great stress upon the importance of rest in the treatment of pulmonary tuberculous in children. The pulse rather than the temperature is the guide by which the amount of exercise and rest should be regulated. Open-air schooling should be limited to three hours daily. Rest in the reclining posture for an hour after the midday meal is insisted on. Hot and humid climates are unfavourable, and also dusty and windy localities. A diet with high fat and proteid figures is necessary. A weekly dose of castor oil reduces the digestive disturbances of superalimentation. Tuberculin in doses commencing at ·00000001 grm. and increasing by 25 per cent. was given to those cases which did not improve by ordinary measures. The local reaction should be the guide to the dosage. No remarkable results are recorded, but satisfactory cures were obtained in glandular tuberculosis. Children should be allowed to resume their ordinary life when the physical signs have disappeared or are stationary for a few months, nutrition normal, and the pulse of normal rate and range. Periods of rapid growth should be carefully watched. Slight respiratory affections should be treated at once by rest in bed. Great care should be taken to prevent measles and whooping cough. No children should enter the consumptive's bedroom, from which carpets should be banished, and where dustless methods of cleaning should be employed. Tonsils and adenoids should be removed from children in contact with tuberculous persons. All contacts should be examined every six months, and the von Pirquet tests should be performed on these and on all children born in tuberculous families. In those that fail to react the test should be reapplied every six months.

Christopher Rolleston.

Water in the prevention and cure of tuberculosis (*'Med. Record,'* 1915, lxxxviii, *p.* 173).—**S. A. Knopf** finds that the majority of his tuberculous patients are constipated and drink very little. Six or eight glassfuls of water must be taken between meals and small quantities at meals. Under this *régime* the temperature falls, headache vanishes, the bowels are evacuated, and the sputum becomes less tenacious. This action of water is aided by taking large quantities of salt. Equally important are cold baths taken in the morning at a temperature of 76° F. In suitable cases the inspiration deepened, the heart contracted better, and the resulting cutaneous hyperæmia relieved the pulmonary congestion. In some cases harm is done. A douche at a temperature of 80° to 70° F. should be applied for short periods at first and should be preceded by a brisk short walk. Complete immersion up to the neck in the ordinary bath is a good alterative, and should be followed by brisk towelling in the bath-room, which must be heated to 80°–85° F. After this the patient should get into a well warmed bed for some time, and a pleasant feeling of warmth should be experienced. The first bath should be taken as follows: The bath is brought near the bed. The patient removes his sleeping suit in bed. Hot water at a temperature of 110° F. is poured into a circular English bath to the depth of about 5 in. The patient stands in the bath and two pitchers of cold water are poured over the shoulders. Wet packs are recommended for night sweats, pleuritic pain, and uncontrollable cough. Three towels should be wrung out of cold water at 50° F. and kept in place by a thick flannel band. In very weak patients the pack should be applied alternately to the upper and lower extremities. When the temperature is very high an ice-bag over the heart will render good service.

Christopher Rolleston.

Results of bone plastic and graft operations on the spine for the cure of Pott's disease (*'Journ. Amer. Med. Assoc.,'* 1913, LXI, *p.* 1780).—**J. J. Nutt** gives the results of fifteen cases which have come under his observation at a convalescent hospital. In these cases either a plastic or graft operation had been performed. The former consists in splitting the spines of several contingent vertebræ in a plane coincident with the antero-posterior medial plane of the body, fracturing these split portions near their back, bending one half of each spine upward and the other half downward, and with sutures securing each half to the opposite half of the vertebra above or below, as the case may be. In the graft operation a piece of bone from the tibia of the patient is transplanted to a bed made for it by splitting the spines of the vertebræ to be immobilised. In the four cases of the plastic operation the result was of no benefit in two and doubtful in two, the deformity of the spine being increased in all. In the eleven instances in which the graft operation had been performed the result was beneficial in three, not beneficial in seven, and doubtful in one; the spinal deformity had not increased in five, but was more marked in six. The writer, therefore, while not unqualifiedly condemning these operations, does not believe that the claims which have been made for them have been substantiated.

T. R. WHIPHAM.

Otology, Rhinology and Laryngology.

Deafness following mumps (*'Med. Record,'* 1915, LXXXVII, *p.* 353).—**J. Weinstein** describes a case in a boy, aged 8 years. Deafness developed four days from the onset of the mumps and became complete in five days. He discusses the literature of the subject and emphasises the importance of prompt treatment.

MACLEOD YEARSLEY.

Otitic pneumococcic bacteræmia (*'Journ. Amer. Med. Assoc.,'* 1915, LXV, *p.* 243).—**A. S. Tenner** reports the case of a girl, aged 9 years, with a double acute otitis which gave rise to a bloody serous discharge and a high temperature for eight days without any signs of mastoid involvement. A blood examination at the end of a week showed a leucocytosis of 14,000, and a culture grew a scanty growth of pneumococci. The child made a good recovery, though it was retarded by a duodenitis, which was undoubtedly metastatic in character.

T. R. WHIPHAM.

Labyrinthitis following operation for atresia (*'Boston Med. and Surg. Journ.,'* 1915, CLXXII, *p.* 700).—**Gordon Berry.**—Boy, aged 15 years, complaining of deafness in the left ear. History of mastoid operation on this side in infancy, but no trace could be found of it. Left auditory canal only entered as far as the bony isthmus. Hearing tests showed a functionating cochlea. Operation for the atresia was performed by chisel and curette, and grafting five days later. Hearing improved. Symptoms of labyrinthitis began two weeks later, and an operation was performed. Recovery took place, but a little over a year later the boy had to be removed to the State Insane Hospital. A long and fully detailed history of the case is given.

MACLEOD YEARSLEY.

The tonsils as a source of local and systemic infection (*'The Polyclinic,'* 1915, XIX, *p.* 23).—**H. Tilley** points out the importance of the supratonsillar fossa as a frequent septic focus. It is not the size of the tonsil that matters, but its septicity. He believes that the symptoms caused by the accumulation of chronic inflammatory products in the supratonsillar fossa is responsible for more mental suffering than any other disease which comes before those who confine their attention to diseases of the upper air-passages. Tonsils play an important part in obscure pyrexia in young children. Septic tonsils should be removed in their entirety. MACLEOD YEARSLEY.

Round worm within the body of a tonsil (*'Journ. Amer. Med. Assoc.,'* 1915, LXIV, *p.* 659).—**A. B. Middleton** reports the case of a girl, aged 8 years, who had not been well since an attack of chicken-pox at the age of 2. She was anæmic, thin, and undersized, and had an adenoidal expression, but had never suffered from sore throat. She had had regular bilious attacks for two or three days at a time once every three weeks. Both tonsils were enlarged, and an operation for the enucleation of the tonsils and adenoids was undertaken. The right tonsil ruptured when the snare was tightened, and a female ascaris, 1¼ in. in length, escaped. Within the tonsil was a cavity which had possibly been the habitat of the worm for several years. After the operation the bilious spells ceased and the child improved in health.

T. R. WHIPHAM.

Vincent's angina (*'Glasgow Med. Journ.,'* 1915, II, *p.* 34).—**J. Harper** was asked to see in consultation a boy, aged 6½ years, who had been suffering from a slight sore throat of three days' duration. He had complained of a headache and was feverish at night, but otherwise was perfectly well, and it was with difficulty he was kept in bed. No pain in the throat was complained of, but the temperature was 102° F., and several whitish patches on the right tonsil were noticed. A perchloride of iron throat paint was given, but the spots gradually increased. When the author saw the case, the boy said he was perfectly well except for a slight headache. The tongue was furred and the breath foul. The right tonsil was covered, in its posterior half, with a dirty greyish membrane, the removal of which caused bleeding. There was no enlargement of the submaxillary and cervical glands, the temperature was 103° F. and the pulse 100. On staining a portion of the membrane, typical fusiform bacilli with numerous spirochætes were found. A strong purge was ordered, and the tonsil was swabbed with perchloride of mercury (1 in 100). Twelve hours later the temperature had fallen to normal and the pulse to 80. For four days the throat was swabbed once daily with nitrate of silver (60 gr. to the oz.). At the end of that time no fusiform bacilli nor spirochætes were to be found on examination of several swabs from the throat. The membrane had disappeared on the third day after commencement of the treatment. For ten days afterwards the patient's throat was swabbed daily with nitrate of silver (15 gr. to the oz.) and since then there has been no reccurrence of the disease.

J. ALLAN.

Parapharyngeal abscess as distinguished from retropharyngeal and peritonsillar abscesses (*'Am. Journ. Dis. Child.,'* 1915, x, *p.* 104).—**H. Heiman.**—Parapharyngeal abscesses are situated in the lateral column of the pharynx and originate in the superior chain of the deep cervical glands which lie along the course of the carotid artery and drain the mouth, tonsils, palate, pharynx, posterior part of tongue, nasal fossæ, interior of skull, and deep parts of head and neck. Although the ætiology of both conditions is practically the same, the retropharyngeal type is most likely to follow ordinary rhino-pharyngitis, while the parapharyngeal type usually follows influenza, tonsillitis, scarlet fever, measles, and other infectious diseases.

Retropharyngeal abscesses nearly always occur in infancy, while parapharyngeal abscesses are commonest after three years of age. As a rule, these abscesses are cured only by external operation. Three illustrative cases are recorded in children aged from 3 to 7½ years.

J. D. ROLLESTON.

Inclusion dermoids of the pharynx ('*Lancet*,' 1915, I, *p.* 595).—**F. J. Poynton, T. N. Higgins,** and **G. R. Pirie** record a case in a female infant, aged 5 months. Under an anæsthetic the tumour was removed. The specimen measured 1½ ins. in length and was half an inch thick at its broadest part and a quarter of an inch at its narrowest. The colour was pale pinkish-white, and to the feel it was soft and smooth; it was covered sparsely with short hair. On section with a knife it was rather tough, and at its centre there was a small cavity in which lying loosely was a small glistening, pearly-white plate of cartilage. Microscopy showed an external covering of thin skin with normal layers of compound epithelium. Under this was the subcutaneous stratum showing hair follicles and sebaceous glands. Deeper still was fibrous and fatty tissue, and in the centre cartilage. References to other recorded cases are made.

J. ALLAN.

The early diagnosis of streptococcic sore throat and the effect of vaccines in its treatment ('*Med. Record*,' 1915, LXXXVII, *p.* 809).—**R. R. Mellon.**—An early examination of cultures from acute sore throat is valuable because it precludes an overgrowth by contaminating organisms, and because it often gives a clue to the virulence and toxicity of the infecting agent. It is, however, of no value in chronic cases. Our ideas as to what constitutes a normal throat and mouth require revision. Absence of pain is no proof of the bacteriological normality of the oral cavity. Tonsils may harbour streptococci or diphtheria bacilli, and the former may develop a focus in the gums and round the roots of the teeth, as well as in the tonsils. Examinations of the oral cavity should look to a more careful interpretation of the organisms found there. The relation of hæmolytic cocci to the arthritides and of the *S. viridans* and pneumococcus to endocarditis necessitates the use of blood agar for this work. Acute cases of streptococcic sore throat respond very quickly and decisively to a vaccine of proved immunising power, provided it is used early.

MACLEOD YEARSLEY.

The use of kaolin to remove bacteria from the throat and nose ('*Journ. Amer. Med. Assoc.*,' 1915, LXIV, *p.* 1985).—**L. Hektoen** and **B. Rappaport** advocate the use of kaolin for the removal of diphtheria bacilli and other bacteria from the throat and nose on account of its great absorptive powers. In addition to frequent insufflation they recommend the swallowing as slowly as possible of one third of a teaspoonful of kaolin four or five times an hour during the day.

T. R. WHIPHAM.

The post-operative antiseptic treatment of the tonsillar fossæ ('*Journ. Amer. Med. Assoc.*,' 1915, LXV, *p.* 160).—**G. P. Marquis** advises that after the tonsils have been removed the tonsillar fossæ should be painted with 25 per cent. tincture of iodine in order to prevent infection. It is necessary, of course, that all hæmorrhage be arrested before the application, or it will be washed away and no effect produced by it.

T. R. WHIPHAM.

Laryngeal papillomata in children (*'Med. Chronicle,'* 1915, LX, *p.* 273).—**Sir Wm. Milligan** describes these growths and points out their greater frequency in males and their local malignancy. Their spontaneous atrophy is quite exceptional, and drug treatment is, as a rule, quite ineffectual. He disapproves of tracheotomy alone, and advises their removal by *direct* or by *suspension* laryngoscopy. Recurrence is best avoided by the local employment of radium or mesothorium. MACLEOD YEARSLEY.

Tracheal casts in diphtheria (*'Thèses de Paris,'* 1914–15, *No.* 66).—**W. Fedorovsky.**—Expulsion of a membranous cast of the trachea after tracheotomy through the tube is not infrequent, but spontaneous expulsion through the mouth is rare. Fedorovsky reports a fatal case in a soldier, aged 29 years, secondary to typhoid fever, and has collected seven other cases from the literature, two in adults, aged 19 and 33, the rest in children aged from 4 to 11 years. J. D. ROLLESTON.

Reviews.

AN INDEX OF PROGNOSIS AND END-RESULTS OF TREATMENT. By various authors. Edited by A. RENDLE SHORT, M.D., B.Sc., F.R.C.S., Assistant Surgeon, Bristol Royal Infirmary. Bristol: John Wright & Sons, Ltd., 1915. Price 21s. net.

THE aims of this work, as stated in the preface, are to set forth the results, and particularly the end-results of various methods of treatment, and to furnish data by which, apart from the question of treatment, an accurate forecast may be obtained of what will probably happen to the individual patient.

The editor has been assisted by twenty-three contributors, fifteen of whom are from London, four from Edinburgh, three from Bristol, and one from Newport. A special effort has been made to supply reliable statistics. Thus the editor in investigating the end-results of treatment at the Bristol Royal Infirmary has had to communicate with more than a thousand patients, and other contributors have taken great trouble to acquire from their private or hospital practice the necessary figures.

The articles of special interest to the pædiatrist are those on the infectious fevers by Dr. E. W. Goodall, on chorea and rheumatic fever by Dr. F. J. Poynton, on congenital heart disease, diseases of the myocardium, and pericarditis by Dr. Carey Coombs, on infantile convulsions, infantile paralysis and meningitis by Dr. Purves Stewart, and on infantile diarrhœa by Dr. J. R. Charles. Most of the articles on the surgery of childhood, such as cleft palate, congenital dislocation of the hip, intussusception, congenital pyloric stenosis, spina bifida, and talipes, are the work of the editor, while the contributions by Mr. W. J. Greer on fractures, of Mr. Hugh Lett on appendicitis, and of Mr. A. J. Wright on diseases of the nose and throat contain much valuable information relating to these conditions in children.

A supplementary index is appended to the volume.

Much praise is to be accorded to the editor and his associates for this most useful work of reference, which forms a worthy companion to the 'Index of Treatment' and 'Index of Differential Diagnosis' brought out by the same publishers. The book is well printed and easy to handle. We have noticed only one misprint, viz. Lee and Bachow for Lees and Barlow, in the article on meningitis. Our only criticism applies to the references to literature. These are supplied by only fourteen of the twenty-four contributors, hardly one of whom shows a uniformity of bibliographical style. J. D. R.

DIET AND DISEASE IN INFANCY. By H. C. CAMERON, M.D., F.R.C.P., Assistant Physician and Physician-in-Charge of the Department for Diseases of Children, Guy's Hospital. London: J. & A. Churchill, 1915. Pp. viii + 208. Price 8s. 6d. net.

To write a book of moderate dimensions on the subject Dr. Cameron has chosen is far from being an easy task. Difficulties of selection and arrangement must necessarily assail the author at almost every turn. In the present case, although we do not think that each difficulty has been overcome with equal success, we can unreservedly say that Dr. Cameron's book is both interesting and helpful.

After a good introduction there are a couple of chapters by Dr. Janet Lane-Claypon upon the subject of a "high-grade" milk. Shortly after there follows an excellent chapter on breast-feeding, one of the most valuable parts of the book. Throughout the volume the author voices the views of the Finkelstein school, which are particularly closely followed in the chapters on the dyspepsias of infancy. These are very well done, clearly arranged and helpfully written. In the latter part of the book the dietetic diseases and those associated with abnormal conditions of the alimentary tract are dealt with, of which we like least the chapter on hypertrophic pyloric stenosis, here described as pylorospasm.

The weakest part of the book is concerned with the artificial feeding of normal infants. Nowhere is a connected account of this subject very clearly given. We are glad to recognise the favour with which the author regards the method of feeding by citrated "whole-milk," but nowhere can we find a good account of the method. Indeed, in spite of the favourable verdict upon it passed upon p. 20, it is not until p. 127 that the amounts of such milk to be given daily are mentioned. Nor does the index help us to discover this. Perhaps by the coalescence and expansion of chapters iv, xvii, and v, a clearer and more helpful account of the subject might be given, and much repetition avoided. Might we not be spared in further editions the excessive use of hyphenated words, for which we cannot share the author's liking; as for instance in the sentence "a protein-rich, sugar-poor mixture"?

We offer these suggestions in view of the "senior student," for whom Dr. Cameron is in part writing. As regards the rest of the book, which comprises the bulk of the volume, not only the unqualified but the experienced will find much to interest and help him, and for ourselves we may say that we have thoroughly enjoyed reading Dr. Cameron's work. R. M.

WHAT EVERY MOTHER SHOULD KNOW. By C. G. KERLEY, M.D., Professor of Diseases of Children, N. Y. Polyclinic Medical School and Hospital. New York: P. B. Hoeber, 1915. Pp. 107. Price 35c. net.

DR. KERLEY'S book consists of a series of hints and items of useful information concerning the welfare of the child. Especially valuable is the advice as to feeding until the child is six years old. Chapters on common ailments and first aid to the baby are included, and also some useful recipes.

The subject matter is somewhat disconnected, and there is no attempt at style, but the book is none the worse on these accounts. We can thoroughly recommend it to the mother of moderate means. T. R. W.

THE HEALTH OF THE CHILD: A MANUAL FOR MOTHERS AND NURSES. By O. HILDESHEIM, M.D., B.Ch., with an Introduction by G. F. STILL, M.D., F.R.C.P. London: Methuen & Co., Ltd., 1915. Pp. 111. Price 1s. net.

THIS little book sets forth in a clear and concise manner the principles on which those who have the care of children should act. The greater part of the book is devoted to growth and development, food and feeding, and the hygiene of the nursery, and there is also a chapter on common complaints and household remedies.

The book is practical and the advice given is sound. Being written in more or less simple language it should serve the purpose for which it was written, and be of considerable use to nurses and mothers. T. R. W.

LORD MAYOR TRELOAR CRIPPLES' HOSPITAL AND COLLEGE, ALTON, HAMPSHIRE. First Medical Report. By H. J. GAUVAIN, M.A., B.C.Cantab., Medical Superintendent. London: Horace Marshall & Son, Temple House, Temple Avenue, E.C., and 125, Fleet Street, E.C., 1915. Price 1s. net.

IN this report is given a brief description, in non-technical language, of the work of the Hospital, of the methods of treatment employed, and of the results achieved. In carrying out the work at Alton the ideal has been: (1) To so increase the patient's powers of resistance that he himself may be made to overcome the disease by which he is attacked and render it innocuous. (2) To preserve and restore any particular bones or joints diseased. (3) To prevent deformity or, if deformity already exists, to correct or reduce this deformity as much as is possible. (4) To educate the patient while he is being treated, if his condition permits. (5) To exercise, as far as possible, efficient after-care and guidance, when treatment in the Hospital is completed and the patient discharged. How these various points are effected is shortly discussed. Clinical histories of several of the cases are given, and there are some interesting remarks on heliotherapy, both natural and artificial. The conservative treatment of tuberculous affections is strongly advocated. The brochure, which is profusely illustrated by many excellent photographs and skiagrams, affords interesting and instructive reading, and a careful perusal of it cannot fail to give the impression of a record of much good work well done. The report deserves to be widely read.

J. A.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. Twenty-sixth session. Edited by LINNÆUS EDFORD LA FÉTRA, M.D. Vol. XXVI. Chicago: American Medical Association Press.

THE volume contains twenty-nine papers, most of which have appeared elsewhere and have already received, or will shortly receive, notice in this JOURNAL. Infant feeding is dealt with by Lovett Morse, Gittings, Milton Miller, and Eason and Woods, infectious diseases by Ruhräh, Friedlander and Wagner, H. D. Chapin, and La Fétra and Schroeder, and abdominal diseases by Kerley, Crozer Griffith, Langley Porter, and Huber. Benedict and Talbot contribute an important article on "The Respiratory Exchange of Infants." Emmett Holt and others write on "The Chemical Composition of Diarrhœal as compared with Normal Stools in Infants," and Rowland G. Freeman on the "Weights and Measurements of Infants and Children in Private Practice compared with Institution Children and School-children." Obituary notices of Morgan Rotch, Putnam, and Forchheimer will be found at the end of the volume. J. D. R.

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Original Articles.

THE EFFICACY OF ANTI-MENINGOCOCCAL SERUM IN THE PRESENT EPIDEMIC OF CEREBRO-SPINAL MENINGITIS.*

By ARNOLD NETTER,
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SINCE the beginning of the year cerebro-spinal meningitis has shown a considerable recrudescence in various parts of our territory, both in the civil population and in the army. This recrudescence is not peculiar to France. The English medical journals and society reports show that our allies are also interested in this question. Among them, as with us, doubts have been expressed as to the efficacy of intra-spinal injections of anti-meningococcal serum.

The Academie de Médecine, where I have championed this truly specific treatment (8) (15) on several occasions since 1909, will understand my legitimate desire to protest against allegations of this kind.

I will do so by making use of my personal cases, which will be seen to be fairly numerous, since at the present date I have treated 226 cases of cerebro-spinal meningitis with serum, 45 of which occurred in the first half of 1915.

I propose to prove, first of all, that cerebro-spinal meningitis has been particularly frequent this year, and that its severity has been greater than in previous years.

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* A communication made to the Académie de Médecine on June the 29th, 1915.

We will then indicate the results obtained by serum treatment, which were as satisfactory in 1915 as in previous years, and are shown not only by the lowering of the mortality, but also by the attenuation of the disease, and the diminished frequency of complications and sequelæ.

We will set forth the technique employed and will show what factors contributed to the good results and what causes were responsible for the various failures reported.

This account will, I hope, justify the confidence which, in our opinion, this valuable serum treatment deserves.

I. Frequency of Cerebro-spinal Meningitis in Paris in 1915. Gravity. Complications. Table of Cases Treated.

On June the 30th the number of cases treated by us was 47, distributed as follows:

January . . .	3 cases,	1 in private practice
February . . .	8 ,,	2 ,, ,,
March . . .	8 ,,	2 ,, ,,
April . . .	14 ,,	2 ,, ,,
May . . .	9 ,,	—
June	5* ,,	1 ,, ,,

Prior to January the 1st, 1915, we had treated 180 patients by serum as follows:

1908 . . .	3 cases	1912 . . .	10 cases
1909 . . .	81 ,,	1913 . . .	21 ,,
1910 . . .	29 ,,	1914 . . .	21 ,,
1911 . . .	16 ,,		

Thus the first half of 1915 contains more cases than any of the previous years except 1909, a year in which the figures are not comparable. During the first months of the epidemic of 1909 our wards in the Hôpital Trousseau had been reserved for children with cerebro-spinal meningitis, and our colleague at this hospital did not have a single case. This year, however, 17 cases were admitted to his wards.

By adding these 17 cases to those we treated in 1915, and subtracting the cases treated in private practice, there results a total of 56 patients for the Hôpital Trousseau during the first 6 months of 1915, as compared with 52 cases treated by us at the same hospital during the first half of 1909.

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* The last 2 cases admitted to hospital on June the 28th and the 30th do not figure in the table on pp. 356–8, which is reserved for completed cases.

The severity of the cases in the year 1915 was certainly not less than those in previous years. On the contrary we were struck by the unusual frequency of manifestations indicating a generalised infection, or to speak more precisely a *meningococcal septicæmia.*

We have never found such a large proportion of generalised eruptions, such as the *diffuse morbilliform eruptions* present in 5 of our patients, and especially *generalised purpura,* the exceptional gravity of which had been shown in the epidemics of "spotted fever" in America and Ireland.

Extra-meningeal localisations have also been more frequent than usual, such as *suppurative arthritis,* of which we noted 3 cases, *metastatic irido-cyclitis,* of which we had one example, and *ulcerative vegetative endocarditis* of which we had a case which will be published later.

Reports made here or in other societies, and other information brought to our knowledge have proved to us that this was not a mere coincidence, peculiar to our wards, but that it was characteristic of the epidemic throughout the extent of our territory.

To speak only of metastatic irido-cyclitis, so rare in the French epidemic of 1909, and of which we had seen only two examples among one hundred and eighty cases, we observed patients with this grave complication in the departments of Aveyron and Landes. We also saw several of these complications in the wards of our colleagues, Renault, Capitan, and Triboulet. In several of our patients in 1915 the invasion of the meninges was preceded for a varying period by signs indicating a general infection or by extrameningeal localisations. We noted cases in which *meningococcal septicæmia* existed *without there ever having been any meningitis,* as in a case recorded by us in 1909 (9).

These cases require serum treatment. They may be detected by blood cultures, the systematic use of which is very valuable.

II. RESULTS OF SERUM TREATMENT SINCE 1908, AND ESPECIALLY DURING THE FIRST SIX MONTHS OF 1915.

Since March, 1908, we have treated 226 cases of cerebro-spinal meningitis with serum, 170 of which were hospital patients, and 56 in private practice.

No single observer, as far as we know, has had so many cases under his personal supervision.

The number of deaths was 62, or a gross mortality of 27·4 per cent., which, after eliminating 16 deaths in less than 24 hours, falls

CEREBRO-SPINAL MENINGITIS IN 1915.

Hospital Cases.

Cases.	Date.	Sex.	Age.	Day of disease of injection.	Total amount of serum injected.	Origin of serum.	Principal feature of disease.	Result.
1	Jan. 15	M.	17 mos.	(?) 4 injections	82 c.c.	American and Dopter's mixed serum	Severe form with purpura, multiple arthritis, and broncho-pneumonia	Death.
2	„ 25	F.	9 mos.	2nd, 3rd, 4th, 5th, 7th, 8th	110 c.c.	Dopter's mixed	Breast-fed child	Recovery.
3	Feb. 6	M.	4 yrs.	4th	30 c.c.	„	Fulminating case, moribund on admission	Death.
4	„ 6	M.	4 yrs.	7th	30 c.c.	„	Improvement on admission. Twin brother of No. 3.	Recovery.
5	„ 10	F.	2 yrs.	4th, 5th, 6th, 7th	110 c.c.	„	Severe case; transient meningeal symptoms	Rapid recovery.
6	„ 12	M.	5½ yrs.	7th, 8th, 9th	80 c.c.	„	Severe case	Rapid recovery.
7	„ 18	M.	3½ yrs.	5th, 6th, 7th, 8th	115 c.c.	„	Severe case	Rapid recovery.
8	„ 22	M.	2½ yrs.	5th, 6th, 7th, 8th	110 c.c.	„	Severe case. Suppurative irido - choroiditis. Local treatment by serum	Recovery. Eye improved.
9	Mar. 3	F.	8 yrs.	6th, 7th, 8th	90 c.c.	„	Very marked rigidity	Rapid recovery.
10	„ 21	F.	7½ yrs.	10th, 11th, 12th, 13th	110 c.c.	Dopter's mixed and American	Severe case, with right hemiplegia and deafness	Rapid recovery. Permanent deafness; cure of hemiplegia.
11	„ 22	F.	4 yrs.	3rd, 4th, 5th	90 c.c.	Do.	Moderate form. Facial paralysis on admission	Recovery. Disappearance of paralysis.
12	„ 23	M.	5 yrs.	3rd, 4th, 5th, 6th	120 c.c.	„	Moderate form	Rapid recovery.
13	„ 29	F.	5 yrs.	6th, 7th, 8th, 9th, 10th	130 c.c.	American	Severe form. Lived with cousin who died of fulminating meningitis	Rapid recovery.

14	„ 29	M.	5 yrs.	4th, 5th, 6th	90 c.c.	American	Severe form	Rapid recovery.
15	Apr. 2	M.	6½ yrs.	(?)	60 c.c.	„	Moribund on admission	Death.
16	„ 7	F.	2½ yrs.	4th	30 c.c.	„	Moribund	Death.
17	„ 5	M.	14½ yrs.	4th, 5th, 6th, 7th, 8th	185 c.c.	„	Very severe form; extreme rigidity. Herpes of arm	Recovery.
18	„ 14	M.	3 yrs.	9th, 10th, 11th	100 c.c.	American and Dopter	Severe form. Admitted with diagnosis of tuberculous meningitis	Rapid recovery.
19	„ 14	M.	2 mos.	21st, 22nd, 23rd, 25th, 26th, 28th	105 c.c.	American	Admitted with multiple arthritis; treated by local injections	Death from marasmus. Arthritis cured.
20	„ 16	M.	4½ yrs.	4th, 5th, 6th	100 c.c.	American and Dopter	Severe form	Rapid recovery.
21	„ 18	M.	9 yrs.	9th, 10th, 11th	80 c.c.	Do.	Severe form; very purulent fluid	Rapid recovery.
22	„ 18	M.	3½ yrs.	1st, 2nd, 3rd	70 c.c.	American	Treated on first day	Rapid recovery.
23	„ 18	M.	9 mos.	21st, 22nd, 23rd	80 c.c.	„	Severe form	Rapid recovery.
24	„ 20	M.	6½ mos.	4th, 5th, 6th, 7th, 9th, 10th	110 c.c.	„	Severe form. Infant at breast	Recovery.
25	„ 25	M.	7½ yrs.	3rd, 4th, 6th, 9th	120 c.c.	„	Very severe form. Coma on admission	Rapid recovery.
26	„ 29	F.	10½ yrs.	3rd, 4th, 5th	90 c.c.	„	Severe form. Admitted as appendicitis	Rapid recovery.
27	May 5	F.	13 yrs.	5th, 6th, 7th	120 c.c.	„	Severe form. Herpes in anal region	Rapid recovery.
28	„ 7	M.	4 yrs.	21st, 22nd, 23rd, 24th, 29th	130 c.c.	„	Probable association with tuberculous meningitis	Taken home moribund.
29	„ 14	F.	2 mos.	4th, 5th, 6th, 7th, 8th, 9th, 10th	145 c.c.	American and Mixed Dopter	Severe form. Morbilliform eruption	Death from marasmus.
30	„ 14	M.	13 yrs.	3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th	180 c.c.	Do.	Temp. 41·7° C. on admission. Vegetative endocarditis cured by intravenous injections of serum	Rapid and complete recovery.
31	„ 15	F.	4 yrs.	3rd, 4th, 5th, 6th	90 c.c.	American	Severe form	Rapid recovery.
32	„ 18	M.	4 yrs.	45th, 46th, 47th	120 c.c.	„	Onset with morbilliform eruption. Admitted late. Cachexia; obstinate vomiting	Death.

CEREBRO-SPINAL MENINGITIS IN 1915—(*continued*).

Hospital Cases.

Cases.	Date.	Sex.	Age.	Day of disease of injection.	Total amount of serum injected.	Origin of serum.	Principal feature of disease.	Result.
33	May 19	F.	4 yrs.	10th, 11th, 12th 13th	140 c c.	American	Association with tuberculous meningitis	Death.
34	„ 24	M.	3 yrs.	49th, 50th, 51st	80 c.c.	„	Very late case	Rapid recovery.
35	„ 29	M.	8 yrs.	5th, 6th, 7th	100 c.c.	American and Mixed Dopter	Severe case	Very rapid recovery.
36	June 7	F.	6 mos.	8th, 9th, 10th	85 c.c.	Do.	Severe case	Rapid recovery.
37	„ 23	F.	3 yrs.	2nd, 3rd, 4th, 5th, 6th	130 c.c.	American	Severe case	Rapid recovery.

Cases in Private Practice.

Cases.	Date.	Sex.	Age.	Day of disease of injection.	Total amount of serum injected.	Origin of serum.	Principal feature of disease.	Result.
1A	Jan.	M.	20 yrs.	2nd, 3rd, 4th, 5th, 6th, 7th, 8th	170 c.c.	Dopter and American	Severe form. Deafness; arthritis	Recovery; deafness.
2A	Feb.	F.	7 yrs.	3rd, 4th, 5th	120 c.c.	Mixed Dopter	Very severe form. Onset with purpura	Death.
3A	Feb.	F.	11 yrs.	3rd, 4th, 5th	120 c.c.	„	Severe form	Rapid recovery.
4A	Mar. 22	F.	50 yrs.	5th, 6th, 7th, 8th, 9th	200 c.c.	American	Very severe form. Purpura; melancholia	Death.
5A	„ 24	M.	6 yrs.	2nd, 3rd	70 c.c.	„	Very acute form. Transient blindness	Rapid recovery.
6A	April	F.	2 yrs.	2nd, 3rd, 4th	70 c.c.	„	Very grave form. Coma	Rapid recovery.
7A	April	F.	16 yrs.	6th, 7th, 8th	70 c.c.	„	Grave form	Rapid recovery.
8A	June	F.	3 yrs.	7th, 8th, 9th, 10th	150 c.c.	„	Grave form. Deafness before treatment	Rapid recovery; deafness.

to 21·9, and after eliminating 22 deaths which could not be attributed to the meningococcus, to 12·5 per cent.

Before the use of serum our mortality was 48·5 per cent. for sporadic cerebro-spinal meningitis. The mortality for epidemic cerebro-spinal meningitis in 1909 was 83·3 per cent. If the mortality had remained the same there would have been 109 fatal cases of sporadic cerebro-spinal meningitis, or 188 of epidemic meningitis. Seen under the most favourable circumstances, the number of lives saved by serum is very considerable, viz., 47 in sporadic meningitis or 116 in epidemic meningitis.

It is interesting to compare our figures with other statistics, especially those of Flexner (6), Dopter (3), E. Levy (7), and Sophian. Flexner's figures comprise 1294 cases with a mortality of 30·9; those of Levy (strictly personal like our own) comprise 165 cases with a gross mortality of 18·18, corrected to 10·06; while Sophian among 180 cases had a gross mortality of 25 per cent., corrected to 15·5 per cent.

It is right, however, to note the entirely different proportion of infants, which with us was 76 among 226 cases, or 34 per cent., with Flexner 216 among 1294, or 16·6 per cent., and with Levy 19 out of 225, or 11·5 per cent. The mortality among infants is considerably higher in spite of serum, viz., 46 per cent. in our cases, and 42·1 per cent. with Flexner and Levy. If the results are compared, after subtracting children under 2 years, our mortality is 17·3 per cent., that of Levy 16 per cent., and that of Flexner 28·6 per cent. Of the 45 cases treated by us in 1915, 34 recovered and 11 died. The mortality for 1915 was therefore 11 deaths out of 45, or 24·4 per cent.

If we wish to estimate the effects of serum treatment it is undoubtedly right not to take into account *three deaths which occurred some hours after a single injection of serum* (Cases 3, 15, and 16).

These cases cannot from any point of view be regarded as having been adequately treated. The mortality after their elimination falls to 8 out of 42 cases, or 9 per cent. Eight deaths remain, of which most, if not all, cannot be attributed to the inefficacy of the serum. In two of these cases in which the autopsy could not be carried out, the clinical course and character of the cerebro-spinal fluid suggested an *association with tuberculous meningitis* (Cases 28 and 33).

Two children died of broncho-pneumonia, which in one (Case 11) was probably tuberculous.

Marasmus was noted in two (Cases 19 and 20). These were infants aged 2 months, bottle-fed, who died with progressive emaciation, and in whom the last lumbar punctures showed a clear sterile fluid.

A child, aged 4 years, died on the forty-fifth day of an unrecognised cerebro-spinal meningitis in a state of *extreme cachexia* following *obstinate vomiting* (Case 32).

A lady, aged 50 years, the subject of melancholia, who had already undergone two courses of isolation treatment, and was suffering from severe meningitis with purpura, died after receiving five injections (Case 4A).

The last death only might on close examination be attributed to inefficacy of the serum, in which case we should have a corrected mortality of 1 in 35, or less than 3 per cent.

Our results for 1915 may therefore be tabulated as follows:

Gross mortality	24·4 per cent.
Net „	19 „
Corrected „	3 „

The 180 cases prior to 1915 gave a—

Gross mortality	28 per cent.
Net „	24 „
Corrected „	12·9 „

These figures are less favourable than those for 1915, but should not be taken too literally. The figures for 1915 have benefited by the relatively smaller number of infants, viz. 7 out of 46, instead of 69 out of 180. The prognosis of *meningitis in the infant* is considerably graver in spite of serum: 47·8 per cent. before 1915, 43 per cent. in 1915. After subtracting these cases the corrected mortality for 1915 is a little lower than before, while the gross and net mortality is a little higher.

The table of our cases treated in 1915 supplies *other proofs of the efficacy of serum treatment*.

The decline in mortality is not the only result, but there are also the attenuation of the symptoms, the rapid recovery and the rarity of complications and sequelæ.

Of 34 cases which ended in *recovery*, the latter in 24 cases was characterised as *rapid*, that is to say, that at the end of the three or four days during which the serum was injected the disease was terminated, and the only symptom which persisted, viz., rigidity, was no indication of the persistence of the meningeal infection, but merely a sign of the irritation caused by contact of the serum with the meninges (10). As a result of this rapid recovery we *never observed in our convalescents the extreme emaciation* which was noticed in previous epidemics.

There were no mental disturbances (11) or permanent paralysis. Whereas cerebro-spinal meningitis before serum treatment always caused hydrocephalus in infants in the rare cases in which it was not fatal to them, the patients of this age who recovered in 1915 showed the normal physical and mental development, and we have only two examples of hydrocephalus as compared with 37 cases of this kind which had recovered before 1915. Three patients who recovered were deaf, and will doubtless remain so. Their *deafness* preceded the first injection of serum, and there are grounds for believing that the use of serum is in many cases able to prevent this terrible complication. One child (Case 8), was affected with *irido-choroiditis* and still has visual trouble (12), but was obviously benefited by injections of serum into the vitreous.

A child who was seized with sudden blindness at the onset of meningitis, without appreciable changes in the eye, recovered her vision the day after the first injection (Case 5A).

A case of *hemiplegia* (Case 10) and one of *facial paralysis* (Case 11) noted on admission showed considerable improvement.

Intra-articular injections of serum caused a rapid cure of *suppurative arthritis* (13) (17), which in one case (Case 1A) appeared after the fourth injection, and in the other affected a large number of joints, and had been noticed before treatment had begun. The child, aged 2 months, was admitted on the twentieth day and died of marasmus. Post mortem we found that the joints, including the hips had returned to the normal.

A case of *vegetative endocarditis* noted four days after admission in a child under treatment, completely recovered after intra-venous injections (Case 30).

III. USE OF ANTI-MENINGOCOCCAL SERUM. DOSES. REPETITION OF INJECTIONS. IMPORTANCE OF EARLY DIAGNOSIS. DIFFICULTIES OF DIAGNOSIS. ADVANTAGES OF A POLYVALENT SERUM. EXPLANATION OF CERTAIN FAILURES.

We should have no difficulty in collecting statistics from other hospitals proving that anti-meningococcal serum has given as satisfactory results as our own, and even more brilliant. But we should probably not find so many cases collected by a single observer under such favourable conditions for comparison.

These successful results must undoubtedly be attributed to our method, which we have described on several occasions since 1909, here and elsewhere.

The serum must be injected in large doses, and the injections repeated *for several days in succession, for three consecutive days at least, and more if the fluid still contains meningococci.*

The necessity of this procedure, which was asserted by us a long time ago, has been realised by Dunn (of Boston) (4), Robb (of Belfast), Levy (of Essen), and others; that is to say, by all the observers who have had to treat a large number of cases of meningitis.

The amount of serum injected in our cases which received complete treatment has always reached a minimum of 70 c.c., and this dose has often been exceeded (180 c.c. in Case 30, 185 c.c. in Case 17). These doses have been employed in infants as well as in other children and adults. No harm results provided care be taken never to inject a larger quantity of serum than the fluid previously withdrawn.

In 1915 we *never observed any serum phenomena* similar to those of which we spoke in our previous communications. Neither have we had any relapses since 1911 in patients who were discharged apparently cured, though we had previously observed a fairly large number of cases. This difference is certainly due to the regularity with which we continue our injections if the fluid still contains micro-organisms. This practice is unfortunately not followed by all practitioners, *many of whom give small doses of serum through fear of possible accidents or stop injecting as soon as they find a local or general improvement.* The result is that the meningococcus becomes more firmly established in less accessible regions and acquires an immunity to serum.

The serum is all the more successful the earlier the treatment is begun. Of our cases in 1915, 13 received the first injection on one of the first three days of the disease. These include only one death due to a broncho-pneumonia which was probably tuberculous. 19 patients were admitted from the fourth to the seventh day of disease; 4 of these died, and 2 arrived moribund. One infant died of marasmus. Of 11 cases who were only treated after the first week of the disease, 4 died.

It is therefore most important to make the diagnosis of cerebro-spinal meningitis as soon as possible.

We have shown that *meningitis may be suspected in the absence of classical signs. These classical signs may be extremely transient* (14), and, consequently, may be absent at the time of our examination. We shall therefore have to take into account the information furnished by persons who have been in contact with the patient.

A syncopal attack or convulsion of short duration, or rigidity lasting for a few minutes, should keep us as much on the alert as epidemiological considerations such as arrival from a locality in which previous cases have occurred, and possible relations with possible germ carriers, like soldiers returning from well-known areas of infection.

Prominence of the fontanelles should be carefully sought for in infants in whom the symptoms are remarkably ill-developed.

Certain phenomena, which apparently have nothing to do with meningitis, especially *purpura*, a *morbilliform eruption, inflammation of the joints or eyes,* or a *fever of intermittent type,* may indicate a *meningococcal septicæmia,* preceding cerebro-spinal meningitis.

In every case there should be no hesitation in performing lumbar puncture on the smallest doubt, and in seeking a confirmation of one's suspicions from examination of the cerebro-spinal fluid.

This microscopical and bacteriological examination may furnish misleading information.

In certain cases the fluid is clear (16), shows only a few cells, and instead of the classical polymorphonuclears contains lymphocytes only. In other cases direct examination and cultures do not show any meningococci (18). By relying on this negative information one must be inclined to refrain from injecting serum. Such abstention may have a bad result, and our advice is to inject without delay on the least doubt.

We now come to another point on which we have not dwelt hitherto and which consequently requires a little amplification—*the nature of the serum injected.* At the time of our first communication the serums in use were all prepared in much the same manner, with hardly any difference except in their source, and in the addition or absence of antiseptics. There were the anti-meningococcal serum of Dopter and the serum of the Rockefeller Institute, which Prof. Flexner generously placed at our disposal.

At the present time we are still employing two kinds of serum: the first is a *mixed serum, two thirds of which consists of anti-meningococcal serum, and one third of Dopter's anti-parameningococcal serum.* The second is *polyvalent serum from the Laboratory of Hygiene of New York City,* which is sterilised by chloroform and not by cresyl. This serum is prepared like that of the Rockefeller Institute from animals who have been immunised with an even greater number and variety of micro-organisms.

We obviously cannot examine here in suitable detail the debated question as to the *choice between monovalent and polyvalent serums* in the treatment of numerous microbial affections. Bacteriological investigations have shown the existence of fairly marked differences between micro-organisms of the same species, especially as regards *B. dysenteriæ*, gonococci, pneumococci, etc.

Meningococci are no exception to the rule, as has been clearly shown by Elser and Huntoon (5), who, while pointing out these differences have admitted that it was merely a case of *more or less different varieties of the classical type.*

Dopter (2), to whom we are indebted for his valuable contributions to our knowledge of cerebro-spinal meningitis, believes that one may go still further, and speaks of *different species.*

He gives the name of *parameningococci* to micro-organisms with the same morphological and cultural characters and the same fermentation reactions as the meningococcus, but behaving differently in regard to agglutinins and precepitins and certain laboratory tests (peritoneum test, vein test).

These parameningococci are not destroyed by anti-meningococcal serum, but are so by an anti-parameningococcal serum obtained by immunising horses with parameningococci.

Meningeal suppuration caused in man by parameningococci is not affected by intraspinal injections of anti-meningococcal serum. It is cured, on the contrary, by injections of anti-parameningococcal serum. Anti-parameningococcal serum therefore should be substituted for anti-meningococcal serum when the latter proves ineffective, or, better still, when laboratory tests have shown that the causal microbe is a parameningococcus.

This very specious advice is, unfortunately, open to objections, which I made here in discussing the communication of MM. Widal and Weissenbach on July the 23rd, 1912, and at the Société Médicale des Hôpitaux on January the 16th, 1914, after a paper by M. Menetrier.

The patient should be given the benefit of serum treatment as soon as possible.

We have seen that the mere *finding of the micro-organism* sometimes *requires too much time* to allow waiting. A considerably longer time is required for the identification of the parameningococcus.

So it appears to us to be wiser *to inject at once a serum which may simultaneously affect the meningococci and the parameningococci.* If an *active serum for both is not available, a mixture of serums for each separately may be injected.*

But it is best to employ a polyvalent serum from the first.

I maintained that the production of a polyvalent serum of this kind was possible, and even that it had been realised.

The American serum was obtained by means of numerous doses of meningococci differing appreciably from one another and showing, according to the investigations of Elser and Huntoon and Martha Wollstein (21), as marked differences as those between meningococci and parameningococci, and the use of this serum on patients had proved to me its efficacy. This necessity for a polyvalent serum has been made clearer still by the findings of Darré and Dumas (1), and Dopter (3), who have shown that there are *several species of parameningococci each of which requires a special serum.*

The animals supplying the American serum in present use are immunised against several different parameningococci simultaneously, and in particular against two distinct parameningococci of Dopter (Flexner). The Institut Pasteur is at present preparing on the same principles a polyvalent serum which will doubtless give us excellent results.

We will just mention injections of anti-meningococcal serum into the *lateral ventricles through the fontanelle in infants and after trephining* in older children and adults. This rational method, invented by Sladen and Cushing, has given Fischer and Levy good results. We have ourselves not yet succeeded in obtaining a definite cure by this method. On the other hand we have had good results from *injections into the joints* in suppurative arthritis, into *the vitreous* in irido-chroiditis and into the veins in meningococcal septicæmia and endocarditis. Penna (19), of Buenos Ayres, has obtained good results from exclusively intravenous injections in cerebrospinal meningitis.

It may seem superfluous to insist on the fact *that anti-meningococcal serum can be of no avail against suppurative meningitis caused by other pathogenic agents,* especially pneumococci, streptococci, staphylococci, Pfeiffer's bacillus, etc. These forms of meningitis are not exceptional, and we have observed 8 cases this year. In the absence of bacteriological examination these cases, which all ended fatally, would have been regarded as proofs of the inefficacy of serum. It is almost certain that several medical men owe their lack of confidence in anti-meningococcal serum to the misinterpretation of cases of this kind. In conclusion we may say that anti-meningococcal serum exerts a most beneficial action on cerebro-spinal meningitis, and that thanks to its use the gravity of the disease has singularly diminished. Sufficient doses must be given, and there should be no hesitation in repeating the injection. If possible a polyvalent serum should be injected. The injections should be given as soon as possible after the onset of the disease, and an effort, therefore should be made to diagnose the case at the earliest possible moment. Lumbar puncture should be performed on the least doubt, and it should not be forgotten that the information obtained by the microscope and cultures may sometimes not yield an immediate solution. We must, therefore, not always wait their verdict before giving the first injection.

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Royal Society of Medicine.

OBSTETRICAL AND GYNÆCOLOGICAL SECTION.

July the 1st, 1915.

The Condition of the Larynx and Trachea in the Stillborn Infant and its bearing on Artificial Respiration.—Mr. E. H. Barton found the following condition, on examination of a number of stillborn children in whom no air had passed the glottis: For about $\frac{1}{3}$ in. below the glottis, which was invariably closed, the trachea was open, narrowing like a funnel from above down till the point was reached where the lumen was entirely obliterated by the folding in of the ends of the cartilaginous rings behind. The trachea was now flattened from before back, and where the posterior part of the rings met one another on the dorsal surface was a vertical groove. The muscular posterior wall of the trachea was folded in such a manner that by its contraction the infolded cartilage ends would be separated and an actual lumen be formed from a potential one. This condition was present to just above the bifurcation where the irregular arrangement of the cartilages prevented complete apposition of the surfaces, the lumen again being filled with mucus. In a few exceptional cases the trachea was filled with mucus and open throughout its length, though flattened, suggesting that some inspiratory effort had been made which, contracting the posterior wall of the trachea, had unfolded the cartilages, even with the glottis closed. Such a condition might have occurred at the moment of birth. The thorax might be regarded as an airless, semi-rigid body, the lungs completely atelectatic and the ribs in close contact with them. Therefore at birth the thorax occupied a smaller space than it could even do after the first breath, however complete expiration was. There was some reason, too, to suppose that the ribs, after the first breath, were under an outward elastic tension, tending to expand the chest and aiding, by their outward spring, the completeness of the first inspiration. The speaker's reason for this assumption lay in the fact that on opening the chest of a child that had never breathed he had found a considerable space between the chest wall and the lungs which appeared to lie at the bottom of a definite cavity. As the airless lungs could not alter their volume this cavity must be made by releasing some tension in the chest wall itself.

The first inspiration of life was a very complicated process; the glottis must be opened, the posterior wall of the trachea must contract, and by its contraction unfold the curved cartilages, converting a closed into an open tube, the ribs under their outward tension sprang open, and air rushed into the hitherto solid lungs. The mucus in the trachea and larger bronchi was drawn into the lungs, but was too small to cause any mucus settling in the lung accompanying the first expiration. The speaker then dwelt on the bearing of these points on the judicious use of artificial respiration. To attempt to apply Sylvester's method in a child who had made no effort to breathe, or rather in whom the glottis was still closed and the trachea empty of air was waste of precious time. The glottis must be opened, the trachea surfaces separated, and then only was artificial respiration possible by methods like Sylvester's.

In many cases, especially after protracted labour, the child made no attempt at the initial inspiration. In such cases the glottis must be mechanically opened by either intubation or blowing into the child's mouth with its nose closed. Air might be drawn into the Eustachian tubes and middle ear, as well as into the stomach, but the speaker had never seen any ill results therefrom. The force used should not be great, and as soon as the lungs were distended physical or artificial respiration could be carried out easily.

Reviews.

An Index of Treatment by Various Writers. Edited by Robert Hutchison, M.D., F.R.C.P., and James Sherren, F.R.C.S. Seventh edition. Revised and enlarged. Bristol: John Wright & Sons, 1915. Price 21*s*. net.

The appearance in 1915 of the seventh edition of a medical work which was first published in 1907 is eloquent proof of its success. The articles in the present edition have been thoroughly revised and in many cases rewritten. Several new articles have been added, including those on sterility, radium-therapy, and the psychoneuroses. Mr. James Sherren has succeeded Mr. Stansfield Collier as surgical editor.

The chief writers on the medical diseases of children are Dr. F. E. Batten (cerebral palsies of childhood, poliomyelitis, and acute encephalitis), Dr. E. W. Goodall (acute infectious diseases), Dr. Leonard Guthrie (infantile convulsions, enuresis, laryngismus in childhood, head nodding, night terrors, tetany in childhood, and cyclical vomiting), Dr. Robert Hutchison (congenital pyloric stenosis, croup, dyspepsia in childhood, marasmus, infant scurvy and vulvo-vaginitis), Dr. F. J. Poynton (chorea, acute rheumatism), the late Dr. Eustace Smith (colic in children, constipation in children, infantile diarrhœa, infant feeding, vomiting in childhood), Dr. John Thomson (mental deficiency in children, rickets), and Dr. A. F. Voelcker (whooping cough). The articles on the surgery of childhood are by Dr. George Cathcart (adenoids), Mr. H. A. T. Fairbank (congenital talipes), Mr. Robert Jones (congenital dislocation of the hip, spina bifida), Mr. Robert Milne (congenital torticollis), the late Mr. Edmund Owen (tuberculous diseases of joints, caries of the spine), Mr. James Sherren (appendicitis, birth palsy, surgical treatment of congenital pyloric stenosis, intussusception), Mr. E. W. Waggett (foreign bodies in the air-passages or œsophagus), and Mr. G. E. Waugh (cleft palate, hare lip, laryngeal obstruction).

The articles are eminently practical, and, generally speaking, complete and well up to date. We notice, however, that nothing is said of the use of vaccines in the treatment of whooping cough, and we are surprised to find no mention of intramuscular injection of antitoxic serum either in the article on diphtheria or in that on specific therapy, beyond the quite erroneous statement on p. 249, that injection into muscle is more painful than into the subcutaneous tissue. We have also sought in vain for any guidance as to treatment of "carriers" in the articles on diphtheria, epidemic cerebro-spinal meningitis, or typhoid fever. These omissions have been noted in no spirit of carping criticism, but in response to the invitation of the editors in the preface, who welcome such suggestions.

The work, as a whole, deserves the highest praise, and it is indispensable to those who wish to keep abreast of the progress of modern therapeutics.

J. D. R.

TETANIA INFANTIL. Por el Dr. D. Carlos Sainz de los Terreros. Madrid, 1915. Pp. 17.

IN this interesting monograph on infantile tetany, the writer adopts the following pathogeny of the disease. Heterologous elements are ingested in cow's milk, and a toxic substance is produced which is neutralised by the normal parathyroid secretion, but may give rise to a functional deficit in these glands. The poison then acts freely on the calcium salts, and the consequent impoverishment of the organism in these salts results in hyperexcitability of the nervous system. The treatment is to be regulated accordingly. In mild cases food containing cow's milk must be withheld for from three to six days, during which the patients should be fed on water and pap made with water. In cases of moderate severity the milk should be stopped for one to two weeks and the aforesaid diet substituted. A gradual return will then be made to milk diet. Calcium chloride should be given by mouth, and cod-liver oil should also be administered. In severe and relapsing cases a strict hydro-farinaceous diet should be ordered for a fortnight, and the return to milk should be very gradual. A calcium salt should be prescribed, preferably the chloride or bromide. A parathyroid preparation should also be added.

J. D. R.

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